
PLANNING FOR RESILIENT COMMUNITIES: AND EVERY OTHER DAY

Learning from the Canterbury 2010-2012 earthquake sequence

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To the people of Christchurch
And to those who so generously gave their time and their stories
Arohanui ki a koutou kā toa

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Glossary of Aotearoa /New Zealand terms

Māori terms have been sourced from Māori Dictionary: www.maoridictionary.co.nz

Aotearoa	The Māori name for New Zealand, originally referring to the North Island.
Bach	Holiday house, sometimes small and modest.
CCC	Christchurch City Council.
CDHB	Canterbury District Health Board
CERA	Canterbury Earthquake Recovery Authority.
CPH	Community and Public Health (Canterbury District Health Board)
ECan	Environment Canterbury, the Canterbury Regional Council.
Iwi	Extended kinship group, tribe, nation, or people, often refers to a large group of people from a common ancestor and can be extended also to mean nationality and race.
Farmy Army	A group of farmers put together by Federated Farmers to assist with the Canterbury earthquake response.
Kaumātua	Māori elder held in high esteem, often holding traditional knowledge or skills, can also refer to an older person.
Kaupapa	A topic, policy, plan, scheme or matter for discussion; can also include an agenda, theme or initiative.
Korowai	A Māori cloak, often ornamental and can be used metaphorically to mean to cover or protect.
Kuia	Female Māori elder.
Maanaki	Is to look after and to show respect and kindness to others.
Marae	Formal meeting places for iwi (tribe) and whanau (family), the place where values of philosophy of Māori culture are carried out and affirmed.
Ngā Hau e Whā	A national marae for every New Zealander situated in the east of Christchurch, opened as a welfare centre following the earthquakes.
Ngāi Tahu	The principal Māori tribe of Te Waipounamu/South Island.
Pakeha	Non-Māori New Zealander, usually of European origin.
Te Rūnanga o Ngāi Tahu	The governance entity of Ngāi Tahu.
Red Zoned	Land now deemed uninhabitable because of the potential for liquefaction, flooding or rock fall.
Rehua Marae	A community based marae in central Christchurch, used as a welfare centre following the earthquakes.
Rūaumoko	Ancestor or deity of earthquakes.
Student Army	Student Volunteer Army, a student run organisation established through social media to provide aid following the Canterbury earthquakes.
Whānau	Extended family group, can be used as a familiar term to address group of people including friends or other forms of kinship ties.
Whanaungatanga	Relationship, kinship or sense of family connection, including sense of belonging through shared experiences and working together.
Whānui	Broad or extensive grouping, often used to clarify the widest extent of a group including global or worldwide.

Thesis Abstract

After a disaster, cities experience profound social and environmental upheaval. Current research on disasters describes this social disruption along with collective community action to provide support. Pre-existing social capital is recognised as fundamental to this observed support. This research examines the relationship between sense of place for neighbourhood, social connectedness and resilience.

Canterbury residents experienced considerable and continued disruption following a large and protracted sequence of earthquakes starting in September 2010. A major aftershock on 22 February 2011 caused significant loss of life, destruction of buildings and infrastructure. Following this earthquake some suburbs of Christchurch showed strong collective action. This research examines the features of the built environment that helped to form this cooperative support. Data were collected through semi-structured interviews with 20 key informants followed by 38 participants from four case study suburbs. The objectives were to describe the community response of suburbs, to identify the key features of the built environment and the role of social infrastructure in fostering social connectedness. The last objective was to contribute to future planning for community resilience.

The findings from this research indicated that social capital and community competence are significant resources to be called upon after a disaster. Features of the local environment facilitated the formation of neighbourhood connections that enabled participants to cope, manage and to collectively solve problems. These features also strengthened a sense of belonging and attachment to the home territory. Propinquity was important; the bumping and gathering places such as schools, small local shops and parks provided the common ground for meaningful pre-existing local interaction.

Well-defined geography, intimate street typology, access to quality natural space and social infrastructure helped to build the local social connections and develop a sense of place. Resourceful individuals and groups were also a factor, and many are drawn to live near the inner city or more natural places. The features are the same well understood attributes that contribute to health and wellbeing. The policy and planning framework needs to consider broader social outcomes, including resilience in new and existing urban developments. The socio-political structures that provide access to secure and stable housing and local education should also be recognised and incorporated into local planning for resilience and the everyday.

Chapter 1: Introduction

Most people belong to multiple communities based on where they live, of family and friends, employment and other groups such as church or activity groups. All these assist in helping to develop a sense of identity and belonging (Mackay, 2014). An important community for many is the neighbourhood, the place where the majority of us live. Neighbourhood is a collection of residents most of who did not know each other before moving there. Where the home is placed in a neighbourhood is arguably as important to life inside the home (Grannis, 2009). Each neighbourhood is different, with unique characteristics of who lives there, the shape and form of that place and all with variable access to natural environments and social infrastructure. Some are distinguished by built structures, others by their natural features or by high levels of community action or social connectedness. The interest here is to ascertain which properties of neighbourhood or community that were important following a disaster. Disaster research has long observed the coming together of communities to provide support and help through the immediate response and then through recovery (Quarantelli & Dynes, 1977; Fischer, 1998; Aldrich, 2012). The factors that contribute to this coming together to provide mutual support is less understood. This research is interested in understanding what helped to shape the observed collective action in across suburbs of Christchurch following the series of devastating Canterbury 2010–2012 earthquakes. This chapter introduces and provides the setting for the background to this research.

1.1 Disaster as a natural experiment

On 4 September 2010, the Canterbury 2010–2012 earthquake sequence began with a 7.1Mw earthquake centred on an unknown fault near Darfield, about 35 kilometres west of the city. This large earthquake was just the beginning of an unusual and protracted seismic event with multiple large and shallow aftershocks that continued into 2012 (Potter et al., 2015). A second large earthquake on 22 February 2011 struck at 12:51pm directly under the city resulting in 185 deaths, thousands injured and extensive damage to land and buildings. This earthquake sequence provides a natural experiment, to develop our understanding of the complexity of social connections within neighbourhoods, specifically in the context of resilience. It has offered a unique opportunity to examine the features and characteristics of where people live and how this impacts on their response and recovery after a disaster.

Disasters are a relatively underused opportunity to analyse and test social theory (Stallings in Quarantelli, 1998). The Canterbury earthquakes have provided a rich dataset for researchers across multiple disciplines including engineering, geology, health, politics, psychology, and

sociology (RCDEMR, 2012). Whether natural or the result of human failure, disasters disrupt and interfere with the routines of everyday social lives. This social disruption is a potentially valuable means to explore the differing levels of social connection that enable neighbourhoods to respond and adapt collectively. Research has already described how responses varied from suburb to suburb and exposed how some had a deeper level of social connectedness, resourcefulness and the ability to act collectively than others (Mamula-Seadon, Selway & Paton, 2012; Thornley, Ball, Signal, Lawson, Te Aho, & Rawson, 2013, 2015; Wilson, 2013; Yanicki, 2013). Thornley et al., (2013) reported that communities with pre-existing community development, whether community driven or through directed community programmes exhibited strong collective action and support. The question is what caused this differentiation in community responses across suburbs often referred to as resilience?

1.2 Framing the research

Community resilience is used as a framing concept in this study. It is useful because it helps guide the research to understand the mechanisms that enabled some neighbourhoods to manage and adapt despite the difficulties surrounding the disaster, while others waited for formal help to arrive. Conceptually, resilience at the individual level is described as a process that contributes to an ability for that individual to cope, manage and adapt to change (Luthans, Vogelgesang & Lester, 2006). Resilience is also a trait of communities where similar characteristics can be observed, some of which are measurable, such as collective action. Community resilience is a useful term because it encapsulates the outcome that is observed and the stressor, in this case, a sequence of earthquakes. Resilience has also been used to mean different things across disciplines, for example social resilience, which explores the dynamics of resilience within social systems. The focus here is on community resilience to a disaster, where definitions emphasise community adaptability and perseverance and the ability to respond to an event (Janssen & Orstrom, 2006; Folke, 2006; Mayunga, 2007; Cutter et al., 2008; Ainuddin & Routray, 2012).

Historically, resilience has been understood in two broad, yet differing ways; engineering resilience and ecosystem resilience (Norris et al., 2008). Resilience was first used by physical scientists to describe specific characteristics of materials and their resistance to external shocks, then to emphasise control and the building of hard structures to manage the environment (Fünfgeld & McEvoy, 2012). Ecosystem resilience was also well established in the ecological literature before it reached the social sciences. This came out of the field of population ecology in the 1970s by theoretical ecologist Holling (1973, p17) as the continuance of relationships within a system and the ability of these to absorb change and persevere. This perspective was developed further

by Walker, Holling, Carpenter and Kinzig (2004) who emphasised the relationship between community resilience, adaptation and transformation as prerequisites for socio-ecological resilience. This has been framed in the context that people and the natural world are interdependent systems (Walker et al., 2004).

Resilience has more recently been described as a slippery concept (Stumpp, 2013), often now replacing the over used word of sustainability within a political and planning context (Cretney, 2014). Resilience and sustainability are not the same, but resilience is complementary to sustainability. In urban planning, notion of sustainability tends to be a concept that is more static or stable through Smart Growth or New Urbanism approaches (Ahern, 2011). Resilience on the other hand is defined as the capacity to respond and change (Walker, Salt & Reid, 2006) offering a shift, a strategic social change from a more directed planning approach with a focus on environmental outcome. To be resilient requires an understanding of the drivers of change and where the dynamics of place is integrated into planning for social outcomes (Pickett et al., 2004). This is the focus here.

A second concept used in this study is social capital. Evidence is growing on the role of social capital in a disaster context and is now embraced as a critical component of resilience (Aldrich, 2010). One major issue with social capital is how it is conceptualised throughout the literature. Social capital has many dimensions and is used by different academic disciplines as well as government and non-government organisations; each has a view of what it means to them. The academic literature explains social capital as a linear construct that is reliant on mutual trust, shared norms and values that delivers social networks (Putman, 1993; Sampson, Raudenbush & Earls, 1997). It is these individual and collective social connections and networks that give access to necessary resources after a disaster (Aldrich & Meyer, 2015). Resources can be physical such as in food or water, financial or less tangible such as information (Hurlbert, Haines & Begg, 2000; Kaniasty & Norris, 1993). These networks also underpin the collective action that can be utilised when needed.

1.3 Research context

This thesis aims to understand how neighbourhood characteristics contribute to resilience within an urban context and to investigate the social preconditions that influenced how well Christchurch residents of different suburbs coped from the time of the first large earthquake through until 2012. New Zealand's Ministry of Civil Defence and Emergency Management (CDEM) identified mobility, sociability and connectedness as significant factors influencing resiliency (Mamula-

Seadon et al., 2012). Connections with immediate neighbours or more widely in the neighbourhood through involvement in groups and activities were shown to be important. This thesis delves deeper into what contributes to social connectedness and what features of the neighbourhood helped to facilitate this so communities in Christchurch could manage, cope and adapt to a significant stressor such as the earthquakes.

This research uses a broad conceptual framework in help reveal patterns and key interactions. It brings together different fields of study. The relationship between place and social connection is well established across the disciplines of health and wellbeing, (Macintyre & Ellaway, 2000; Macintyre, Ellaway & Cummins, 2002; Bernard et al., 2007; Braveman, Egerter & Williams, 2011); environmental psychology (McMillan & Chavis, 1986; Manzo, 2005) and social sustainability (Dempsey et al., 2011; Baldwin & King 2017). The physical and social features of neighbourhood help to provide the setting for the health and wellbeing of residents (Macintyre et al., 2002) and the opportunity for social interaction (Hooper, Ivory & Fougere, 2015). Evidence also shows that good design can promote both health and socialising factors (Witten, Pearce & Day, 2011) and that both individual and collective outcomes can be improved by planning for and managing the physical environment in which people live (Leyden, 2003). Leyden (2003) showed that the density and interactions afforded by neighbourhood amenity can potentially influence the level of social connections, especially in walkable neighbourhoods. This is often not translated well into broader land use planning. And within government policy agendas the economic and environmental dimensions of urban environments have had greater emphasis than the social dimension as cities increasingly aim for economically productive or environmentally sound outcomes. Less emphasis is placed on developing the social elements of urban life for improved outcomes (Kelly et al., 2012).

The consideration of resilience within a land use planning perspective has traditionally had a narrow focus, concentrating on the mitigation of natural hazards through such things as flood protection works or more robust building standards. For historic geographical reasons many cities are located within hazard zones or are vulnerable to intensifying or changing weather patterns (Hewitt, 2013). Given the growth and intensification of urban life, there is a need for a transformational change and a wider focus to planning to create more resilient urban communities. In 1990, 43 percent or 2.3 billion people globally lived in urban areas, this increased to 54 percent by 2015 (UN Habitat, 2016). By 2030, the urban population is expected reach 4.9 billion (60 percent) increasing to 70 percent of people living within cities by 2050 (United Nations, 2016; Angel et al., 2011). What is developed today will influence the urban environments for health and

wellbeing of residents for years to come. The shape of the city, the buildings, streets, neighbourhoods, and the quality and access to infrastructure will help determine the quality of life. It will also influence the resilience of residents, their ability to respond to disruptions caused by natural and other hazards, including extreme weather events.

The role of the built environment in facilitating or enhancing community resilience has not been well explored (Carpenter, 2013). Some studies have examined how service based organisations provide support for the most vulnerable (Green et al., 2007), while others focus on grassroots style collective action to help and to provide support to residents within a neighbourhood (Chamlee-Wright & Storr, 2009; Thornley et al., 2015) or civil society responses and the different origins of organisations and groups to assist residents (Yanicki, 2013). Few studies have considered how neighbourhood could help shape the response of residents after a disaster.

Research has shown that features of neighbourhood can influence individual behaviour, attitudes and values (Sampson, Morenoff, Gannon & Rowley, 2002), exert influence on health and wellbeing and helps individuals to connect and belong (Hooper et al., 2015). The term neighbourhood is, however, difficult to define as the spatial variables are individually held. Within a suburb, neighbourhood characteristics can be diverse, with differing geography, levels of deprivation or affluence, access to resources and individual resourcefulness. Suburbs are generally made up of a collection of neighbourhoods. This research uses the term neighbourhood to refer to that place, in the broader context of where home is situated and what someone feels is there neighbourhood. For some, this may be one or a few streets, for others it can be a whole suburb depending on the context.

Our understanding is growing on the relationship between neighbourhood and social connectedness. And although social connections are increasingly recognised as important influences on how people live their lives, it is difficult to identify what underpins or helps to form these connections. It is reasonably straightforward to put emphasis on the design of the physical form within a city, however, the work to identify, measure and develop the social interaction and connections in relation to that physical form is complex. The Chicago School sociologists recognised the role of the physical environment influencing social outcomes, who argue the contribution is both ambiguous and diverse (Sampson & Morenoff, 1997). All levels of government and many organisations, developers, market interests and conditions are responsible for the built environment (Brown & Chung, 2008; King, 2013). An issue is how to integrate various responsibilities and the formidable complexity of managing the built environment to

provide the best social, cultural, environmental and economic outcomes. Given the current focus on economics, a significant challenge is to provide evidence on how quality neighbourhood can improve the lives of urban residents. Evidence is needed that can inform and motivate policy changes to improve social connectedness for health and wellbeing and for resilience; to plan cities for multiple outcomes.

This study is part of the Resilient Urban Future Programme¹, a four-year New Zealand Ministry of Business, Innovation and Employment funded research programme. The programme ran from October 2012 to 2016 to research the links between housing, transport, urban form, water and resiliency through comparative case studies and local policy experiments. This study contributes to the project investigating what helps to develop good community. The Canterbury 2010-2012 earthquake sequence provides a rare opportunity to examine the role of neighbourhood characteristics on resilience and recovery.

1.4 Research question and aims

Research for this thesis began with an interest in how residents of different neighbourhoods and suburbs in Christchurch responded and adapted following the 22 February 2011 earthquake. The first question was why some suburbs showed stronger collective action while others waited for formal support to arrive. The importance of social capital in helping with the distribution of much needed resources such as food and water and opportunities for sharing is well described (Nakagawa & Shaw, 2004; Aldrich, 2012; Carpenter, 2013; Wickes, Zahnow & Taylor, 2013). This social capital may be relatively well accepted as a fundamental component of a resilient community, but what helps the formation of this capital in the first place is not well explained.

This research works to identify the features or characteristics of different neighbourhoods that enabled the observed collective action and self-help following the Canterbury 2010-2012 earthquake sequence. After a review of the literature across multiple disciplines, a gap was observed in terms of our understanding of the relationship between neighbourhood and social capital in the context of helping to build community resilience. What is it about features of neighbourhood that helps to develop a sense of place that can contribute to our understanding of community resilience? Under this overarching question there are three aims, and these are to:

1. Describe the community response of suburbs in Christchurch following the Canterbury 2010-2012 earthquake sequence.

¹ <http://sustainablecities.org.nz/resilient-urban-futures>

2. Explore the key features of the urban environment, the built form and social infrastructure that was important to helping to develop a sense of place and the emergent local leadership.
3. Explain how understanding these could influence future planning for resilience.

The focus here is on the geographical community, neighbourhood or suburb in which people carry out their activities: the places where they live their lives. A focus on the local connections is used, because across Christchurch the impact of the earthquakes was so great core infrastructure such as water and electricity were disrupted, most employment ceased, and the central city was locked under a cordon managed by the Aotearoa/New Zealand army. Residents for the most part remained within their neighbourhoods, they experienced the post-earthquake period in their local neighbourhood.

The research approach taken was qualitative, through questioning of key informants who were all in some way involved in the earthquake response. These interviews helped to develop the next step, which was to explore the narratives of residents in four case study suburbs of Christchurch; Hoon Hay, Merivale, Opawa and Phillipstown. These suburbs in the central and southern parts of the city all experienced damage with many homes requiring either significant repair or needing to be rebuilt, however, no land in these suburbs was deemed unsuitable for residential living (red zoned²). The populations within these suburbs have remained relatively stable (StatsNZ, 2013) with most residents continuing to live in the neighbourhood where they experienced the earthquakes.

1.5 Structure of the thesis

Following this introductory chapter, Chapter 2 provides a review of the literature and helps to set out the theoretical base for the research. It reviews and examines the literature on community theory of disaster, social capital in relation to neighbourhood, first as a theoretical concept and then focusing on literature as it relates place and sense of place. The review then moves into a discussion linking social connectedness with sense of place and the urban environment and community resilience.

Chapter 3 introduces the historical background of Christchurch, noting how the city has evolved following settlement by Ngāi Tahu³ and colonists, followed by the planning context under which the city has developed over the decades. This chapter then describes the earthquake sequence and

² <http://cera.govt.nz/land-information/red-zone>, where homes were removed from areas with unstable land.

³ The principal Māori tribe of Te Waipounamu/South Island

its impact on residents and physical form of the city. The last section gives some background on the pre-earthquake planning context, the intended direction of city planning before the earthquakes struck and the planning and political context that followed.

Chapter 4 introduces my background, the methodological approach taken, research setting and the rationale for selecting the four case study suburbs. This chapter also describes the research design, the qualitative method used to capture of data from key informants and participants, and the analysis process.

Chapters 5 and 6 present the research findings. Chapter 5 addresses the first research question, with reference to the community response across the city and specifically in participant suburbs. It draws on accounts from key informants and participant interviews to explore what was experienced and understood of the time after the earthquakes. This chapter starts to highlight the similarities and differences across suburbs. Chapter 6 then examines the features of their neighbourhood and suburb as described by participants, their sense of belonging and sense of place. Here participants describe where they live, their place of residence, their neighbourhood and suburb and wider city. This chapter provides the foundation for understanding what was observed in Chapter 5.

Chapter 7 builds on Chapters 5 and 6 to discuss the features of neighbourhood that helped (or didn't help) to underpin the observed collective action and self-help that enabled neighbourhoods to manage. This chapter initiates the dialogue on how the attributes of neighbourhood good for health and wellbeing contribute sense of place toward building community resilience. The nexus between the compositional and contextual elements of where people live can explain why some places exhibit stronger collective action and self-help. The final part of this chapter draws out the findings from the research and the policy and planning implications including the emergency management framework.

Finally, Chapter 8 concludes with an overview of the main findings and the headway made toward answering the research question and underlying aims, the limitations with this study and the contribution made. I finish with recommendations for further research and notes on how this might be applied to a policy and planning context.

Chapter 2: Review of the literature

2.1 Introduction

The devastation in greater Christchurch caused by the Canterbury 2010–2012 earthquake sequence showed how vulnerable a city can be. These earthquakes revealed the importance of local neighbourhood or community in the post-quake response and recovery period. Early reports and articles describe how local communities responded, where people collected together and helped each other out during the immediate response phase of the disaster.⁴ Research followed, demonstrating similar patterns of behaviour (Lambert, 2013; Thornley et al., 2013, 2015). An important factor observed throughout this work was the presence of strong social networks, especially at the neighbourhood level that facilitated this collective action.

When the scale of a disaster exceeds the formal emergency management capability, local communities need to respond and manage until infrastructure is restored (Murphy, 2007). The structure of the emergency management system with a top down command and control approach is essential for the immediate response period. This is well described in the literature (Nigg & Perry, 1988; Tierney et al., 2001; Kapucu, 2008). Early research has tended to focus on this immediate response, usually on the behaviour of individuals or households, their psychological or mental health or how well they dealt with the actual event (Dynes, 1970; Quarantelli, 1994). Over the past decade, however, greater importance has been directed to social capital in disaster resilience and recovery (Adger et al., 2005; Aldrich, 2010, 2012; Cox & Perry, 2011; Paton & Johnston, 2017). The top down approach may not suit the needs of local communities in the continuing response period as they wait for support to arrive, core infrastructure to be reinstated and recovery to begin.

Research on community resilience, mostly overlooks the complexity of landscape factors that can support and nourish resilient communities. The current understanding of factors determining community resilience - the ability to cope, manage and adapt after a disaster, do not emphasise the role of neighbourhood. In summary there is little emphasis on the influence of place in strengthening community resilience (Carpenter, 2013). Despite this, it may be possible to define and explain the important features that contribute to positive outcomes; specifically, to understand how the physical environment can enhance or hinder the development and maintenance of social networks.

⁴ <http://www.quakestories.govt.nz/stories>

There is, however, extensive literature on the relationship between health and place. Research has been directed to the role of place in promoting health and wellbeing (Macintyre & Ellaway, 2000; Diez Roux, 2001), social sustainability (Dempsey et al., 2011), social cohesion (Scannell & Gifford, 2010); sense of place (Manzo, 2005) and belonging (Hooper, 2015).

To better understand the complexity of place in relation to community resilience, this chapter reviews the literature across multiple disciplines. This review aims to develop a more nuanced understanding of what features of neighbourhood help to explain the variation of outcomes. First is a review of the literature on disaster research response and recovery, the relationship between hazard and disaster and the theoretical framework of resilience. The review then moves on to explore the role of the built environment in the formation of social capital and then to consider the connection among built environment, social connectedness and resilience.

2.2 Where disaster research began

American sociologists in the 1960s started the first disciplined studies researching the social change of individuals, communities and organisations following a disaster (Rodriguez et al., 2007). The focus was how to reduce vulnerability within communities, particularly in relation to mitigation and risk to natural hazards. This period also saw the emergence of international disaster policy where similarly, the focus was on disaster management and risk reduction. Very little interest was given to the broader scope of social preparedness and recovery (Kipp, 2016).

One of the first to explore the social response of individuals and communities was Prince (1920 referenced in Quarantelli & Dynes, 1977) after the 1917 explosion of a French munitions ship in Halifax Harbour, although Prince's use of second-hand reports of hysterical and bad behaviour was later contested (Scanlon, 1988). Nearly two decades later in 1938, Prince with Kutak described the first informal response, 'the spontaneous helping each other' or collective action of local affected communities; they termed this the "democracy of common disaster" (Blaikie et al., 1994). Around this time Carr (1932) attempted to classify and describe the phases of a disaster (Coetzee & van Niekerk, 2012), he used examples of both natural and technological disasters to understand and classify the sequence of events. Barton (1969), Dynes (1970) and Mileti et al., (1975) also contributed to describing the different phases of a disaster. Then in 1979, the United States National Governors' Association finally categorised the four dimensions previously identified: disaster mitigation; preparedness, response and post disaster recovery. These are all now well used in the academic literature (Petak, 1985; Hewitt, 1997; Tierney, Lindell & Perry, 2001; Kapucu, 2008). Mitigation covers any actions aimed to prevent a disaster occurring or to

reduce risk to human life and property. Preparedness involves establishing plans, and evacuation and warning systems. The response is the short-term emergency phase, when activities such as first aid, search and rescue and damage control are carried out. Recovery covers all post disaster activities, the rebuilding of infrastructure and the restoration of services. Although widely used, this four-part sequence has been described as not very helpful, given that disasters do not flow neatly from one phase to the next (Haas, Kates & Bowden, 1977). Each phase overlaps with the others, with the boundary between response to recovery especially unclear (Godschalk, 1999).

Understanding around what supports a community in disaster is fragmented. This may reflect how hazard management is researched, being largely driven by engineering, geology and disaster preparedness scholars with their focus on the event itself or on the events immediately pre-and post-disaster. Longer term community analyses are complex and require long term placement in the disaster zone to understand local community needs and direction. Also, factors that best support community development processes are specific to each community, or place. The pre-disaster conditions and socio-political structure of a place determine the social and structural vulnerability of that place (Otway & Wynne, 1989; Nigg, 1995).

A significant proportion of research to date has focussed on individuals or households, usually relating to behaviour, psychological or mental health and how well they dealt with the actual event (Quarantelli, 1994; Dynes, 1970). Others have researched disaster management (Berke & Beatley, 1992), household recovery (Bolin, 1982, 1993) housing and population (Quarantelli, 1994) individual experiences (Bolin & Bolton, 1986; Oliver-Smith, 1991; Paton, et al., 2003) community wellbeing and psychology (Thornley et al., 2013; Gawith et al., 2013), and psychological stress (Dorahy & Kannis-Dymand, 2011; Gordon, 2013). More specific issues include the effects on organisations, business recovery or economic outcomes (Tierney, 1995; Chang, 2010; Stevenson et al., 2010; Stevenson, 2014).

It was not until the 1980s that researchers revealed the role of socio-political decisions in the unfolding events of disasters, recognising that hazard management and vulnerability are driven by social factors (Blaikie et al., 1994). Considerable research points to the importance of the community response in post disaster recovery settings (Berke et al., 1993; Dynes & Tierney, 1994; Simile, 1995, Bolin & Stanford, 1998; Mileti, 1999; Nakagawa & Shaw, 2004; Yasui, 2007; Chamlee-Wright et al., 2011; Gonzalez-Mussio, 2013; Thornley et al., 2013, 2015; Wilson, 2013). Most of these, especially the earlier papers, focus on what went wrong following a disaster, or are descriptive with little underlying explanation. Very few examine what went right, or what was essential for people to look after themselves and to organise together to help others. The general

position has been that individuals experience disasters as passive participants waiting for response organisations to support them, although some work does examine the rise of community groups formed to fight for the rights of individuals (Simile, 1995; Aldrich, 2012). Simile (1995) studied the collective action of groups of residents in a community affected by Hurricane Hugo (1989) and the Loma Prieta (1989) earthquake. She found neighbourhoods with pre-existing community groups operating prior to the disaster, did better than places where no community based organisations existed before. These groups were better able to initiate and maintain participation in recovery activities. Conversely, where there were pre-existing community conflicts, these also resurfaced quickly (Simile, 1995).

Increasingly, research now recognises the role of social capital to help facilitate collective action for mutual benefit (Chamlee-Wright & Storr, 2012). Social capital underpins the initial community response to an emergency (Dynes, 2005) and is an asset to be called on in a crisis (Woolcock & Narayan, 2000; Aldrich, 2012, 2015). A range of definitions of social capital are used to describe this action and many terms are used but with limited agreement. All share to some extent the basic assumption that after a disaster social connections and networks provide benefit (Cabrera, 2013). The arguments made in this literature review start with an overview of the main definitions used.

2.3 Context and key terms used

The purpose of this section is to explore the literature dealing with the context and definitions used in the community-based theory of disasters. It starts with defining what is a disaster and community or neighbourhood. This section then works towards examining the literature on community resilience, response and recovery.

2.3.1 Disaster and hazard

Early research used the terms *natural disaster* and *natural hazards* interchangeably to describe the interface between human activity and environmental hazards. Dynes (1970) and Kreps (1984) were some of the first to question how best to define and conceptualise the use of the word disaster in social terms, as a social phenomenon that should be considered in that wider context. Hewitt (1997) and Quarantelli et al., (1998) also defined disasters in a social context, stressing disasters also vary enormously from place to place and at different scales. The physical risk of environmental hazards such as seismic or climatic activity is caused by geological and meteorological characteristics. The risk of a disaster, however, is the outcome of the interaction between these events and the socio-political features of our human activities (Hewitt, 1997). Not

all hazardous events end in disaster. The disaster occurs when the physical event intersects with the vulnerable, through the built and socioeconomic environments (Okuyama & Chang, 2004).

There is no evidence of greater geological risk from earthquakes, but their impact is growing with the increasing population and associated activities extending further into more hazardous areas (Hewitt, 1997; United Nations, 2016). In contrast, meteorological events are becoming more intense and a changing climate is predicted to bring more powerful weather-related events (Hewitt, 2013; IPCC, 2007). The concentration of vulnerable people exposed to hazard situations is growing and more people globally are likely to be affected by smaller events (Blaikie et al., 1994; Pelling, 2003; UNDP 2006). In any one year many smaller scale events such as typhoons, floods and landslides affect more communities around the world (Hoyois et al., 2007). For this reason, much of the literature on vulnerability from hazards has focussed on developing nations (UNDP, 2006). Nevertheless, major climatic and geological events can still affect developed and well-prepared nations (Murphy, 2007). Examples of recent large events across the world include the 2004 Sumatra Andaman earthquake and tsunami with 200,000+ deaths, the 2008 Wenchuan, China earthquake (7.9 M_w) 80,000 dead and 80 percent of buildings destroyed. The 2010 Haiti earthquake left more than 200,000 dead and as many as 1.5 million homeless. The Tōhoku earthquake and tsunami of Japan in March 2011, where 20,000 died, was the most expensive natural disaster recorded estimated at \$US 210 billion (Mimura et al., 2011). Other events include the North American hurricanes of Andrew 1992, and Katrina 2005, and the Bangladeshi and Myanmar cyclones of 1991 and 2008. Closer to New Zealand, the 2009 Victorian bush fires were the worst in Australian recorded history. Extreme fire conditions resulted in 173 deaths (Paton, 2014) and the loss of about 2000 homes; many more were badly damaged costing A\$ 4 billion (VBRC, 2009).

Disasters can also extend beyond national borders. In 1783, Iceland's Laki volcano erupted and continued for eight months (Jacoby et al., 1999). This event killed a quarter of Iceland's people also causing severe environmental stress and hazard to health far beyond Iceland (Wood, 1992). Within two months, ash covered land north of 30° latitude across all of Europe, North America and Asia. Historic records, geological studies and tree-ring data show 1783/84 as extremely cold, resulting in substantial population loss in Northwest Alaska. As many as one million people died of famine in Japan alone (Zielinski, 2000). The Mississippi River froze at New Orleans and ice floes were seen in the Gulf of Mexico (Jacoby et al., 1999). Large events such as this will happen again.

2.3.2 Community /neighbourhood / suburb

Community has both spatial and social dimensions. It is a word used every day to denote the social relations and activities, cultural values and also sense of belonging in a particular group or place (Scott et al., 2015). It is a very opaque concept, often used as part of a political narrative to convey togetherness or similarity. A community may entail belonging to a neighbourhood, or to social groups such as family or church, (Barton, 1969) and in New Zealand this can be a marae⁵ or other whanau based grouping. Communities where people with some degree of shared preference or belief interact on a regular and voluntary basis have specific characteristics and these characteristics may change in response to internal or external influences (Flora, 1998). As early as the 1950s, social network models were used to help analyse and explain community behaviour (Berkman et al., 2000). These models assume that it is the structure of the social network that is responsible for behaviour. In other words, because communities are socially and hierarchically positioned, individuals within them typically have variable access to resources and influence (Murphy, 2007). The social arrangements determine what resources are available to an individual and that in turn determines how they will behave.

The boundaries used to define a community may not be clear and it is not always easy to determine where a community begins or ends. It is possible, however, to evaluate relationships between people within a network, to test if community exists and whether it is based on family, neighbour, friend or colleague (Wellman et al., 1988). Similarly, it is possible to assess the social constructions of place based communities such as neighbourhoods (Murphy, 2007).

The characteristics of neighbourhoods are diverse, with variations in geography and socioeconomic factors affecting access to infrastructure and amenity. Neighbourhood size is also dependent on individually held values. Miller (1999) determined that a behaviourally positioned definition of neighbourhood was needed to determine the range of factors that can influence neighbourhoods. An issue with neighbourhood used in the literature is the narrow geographical definition applied to studies, often by census data or administration lines. Neighbourhood boundaries are best determined by the people who live in them, according to what they feel about where they live and the relationships that they have within that place. (Miller, 1999). This is the definition of neighbourhood used in this research.

⁵ Marae are formal meeting places for iwi (tribe) and whanau (family).

Suburb in contrast is named and has a defined boundary. In this case a suburb is the residential area as identified and formalised through the geographic subdivision of Christchurch and used for administration purposes.

2.3.3 Community resilience

Several community-based theories examine and describe resilience through the immediate response and recovery phase. Key themes relating to resilience include vulnerability, community development and community capacity building. All have a common theme of being underpinned by social capital. While much of this research investigates the immediate aftermath of a disaster, research on community resilience, response and recovery over a longer time frame is not particularly well documented. Kates and Pijawka (1977) recognised 40 years ago, the deficiency of knowledge on neighbourhood collective action, especially the value of social networks in promoting community resilience. Others have also stated that what helps communities in the post disaster response requires more attention (Mileti, 1999; National Research Council, 2006; Murphy, 2007).

Across the social sciences, resilience is described as having the capacity to successfully adapt in the face of a disturbance, stress or adversity (Norris et al., 2008). This has been further refined to define a process where individuals and communities are resourceful following a hazard, so can anticipate, cope and adapt over time (Paton & Johnston, 2006). Although Cutter et al., (2008) emphasises that our understanding of community resilience is still developing.

A strong focus of resilience in the literature relates to vulnerability, where the characteristics of a community make it less able to cope or manage. Blaikie et al., (1994) define vulnerability as the characteristics of individuals or groups in terms of their capacity to adapt and manage, by age, gender, race, physical or mental ability, societal status and wealth. It is well established that disasters concentrate effects on the most socially vulnerable, especially the elderly, the poor, minority groups and women (Morrow, 1999; Laska & Morrow, 2006; Steinberg, 2006; Cutter et al., 2006; Cutter & Finch, 2008; Oliver-Smith, 2014). Earthquakes specifically often harm the young, old, women and the disenfranchised (Wisner, 2004). Vulnerability is affected by the individual differences described above, but is also dependent on the cumulative interaction of sociological, political, economic and community development factors. This is well documented (Blaikie et al., 1994; Varley, 1994; Hewitt, 1997; Manyena, 2006). In a disaster context, vulnerable communities will include those that lack access to resources, do not have community

leaders, or the knowledge and skills to obtain what is necessary to maintain a reasonable standard of existence until infrastructure is restored (Murphy, 2007).

Adaptive capacity is a more widely used term to describe the pre-existing ability of a community to have the capability to cope and manage (Martin-Breen & Anderies, 2011). Some communities are more able to adapt and manage, especially place based communities with close proximity of members, although some dispersed communities can also show similar traits - dependent on location and access to resources (Berkes & Ross, 2013). The resilience factors that enable a community to adapt to a disaster occur at multiple scales, individual, household and community, and all are interrelated and influence each other in complex ways (Berke et al., 1993; Berkes & Ross, 2013).

Disasters both reveal and extend any pre-existing problems faced by a community due to unequal distribution of resources (Hewitt, 1997). Societies may understand well who is vulnerable generally, and some groups are at special risk (Blaikie et al., 1994). This does not help to explain the important elements in a community response (Wisner, 2004). It has been shown that the less vulnerable can solve problems collectively and improve the quality of local life, and that neighbourhoods that respond with collective effort have the capacity to cope and the ability to reduce their vulnerability, and therefore tend to be more resilient (Blaikie et al., 1994; Davis, 2004; Manyena, 2006). The literature generally does not use the word capacity, although the role of community and its capacity to assist affected individuals has been discussed in various studies (Bolin & Stanford, 1998; Klinenberg, 2003; Anderson & Woodrow, 1991). These studies, however, still do not touch on the *features* that contribute to how a community is able to respond or to adapt.

There is also a significant gap in our understanding of the sequence between the immediate response and recovery, how they interrelate, or even transition. The literature identifies the lack of association between the trajectories of recovery and resilience. Norris et al., (2008) provide a definition for both. Resilience involves the short-lived period of perturbation that may last weeks but, which comprises a stable trajectory of healthy functioning. The trajectory of recovery, by comparison, starts at the time of disruption caused by the stressor event and continues until everyday life is re-established, this can last for days, weeks, months or significantly longer (Norris et al., 2008). Recovery includes the gradual return to pre-event functioning and may take years to reach the new normal (Bonanno, 2004). This is still one of the least understood phase of a disaster (Haas et al., 1977; Rubin et al., 1985; Berke et al., 1993; Quarantelli, 1999; Mileti, 1999; Tierney

et al., 2001; Olshanksy, 2005, Paton et al., 2014). What is also not discussed in the literature is the importance of the pre-existing mechanisms affecting both resilience and recovery.

2.3.4 Recovery

Haas et al., (1977) were the first to undertake a multi-site longitudinal study of community recovery, by examining the reconstruction and recovery following earthquakes in San Francisco, Anchorage, Managua and Nicaragua, and floods in Rapid City, USA. They reiterated the model of the recovery process - emergency period, restoration period, replacement construction and commemorative periods followed by a betterment phase; with each phase theoretically taking 10 times longer than the previous phase and phase overlap being possible. This work was later criticised by recovery researchers (Berke et al., 1993), and others found instances where the four stages could occur out of sequence or simultaneously within the same community (Rubin et al., 1985). Quarantelli (1999) noted that the four-stage model does not reflect or adequately accommodate the diverse and often conflicting nature of recovery.

The literature also identifies that returning to normality is not enough to describe recovery. The UNISDR (2009) provides a definition “the restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors”. This is not particularly helpful for this research. Rebuilding a neighbourhood to pre-existing conditions may not remove the threat nor necessarily strengthen a community (Haas et al., 1977), nor aim for safer and improved community outcomes (Wisner et al., 2004). Recovery is also often expressed as the return of essential core infrastructure. National and local governments, in tandem with the private sector, generally focus on the restoration and reconstruction of core infrastructure and replacing buildings. The emphasis, therefore, is on restoring the physical fabric. Significantly less attention has been directed to the social recovery of communities over the short or longer term. Although evidence can also show recovery is not consistent across neighbourhoods within a city (Rovai, 1994; Aldrich & Crook, 2008; Pais & Elliot, 2008; Wood, Burton & Cutter, 2010).

Several factors have been found to be important for recovery, the magnitude of the damage, resources required and development trends that existed prior to the event. Successful and faster growing cities recover quicker, while cities with stable or slow growing populations take more time to recover. Research of the 1923 Tokyo earthquake compared wards that suffered damage and loss of life from the fires that followed. Wards with more damage often had higher return population growth than less damaged wards. Social capital was observed to be the most important

variable for the regrowth (Aldrich, 2012). Residents of the successful Tokyo wards, supported people to return to their old neighbourhood, Small (2009) also noted the importance of community-based organisations in this recovery. Groups such as religious or community based centres have been observed to be important community anchors (Chamlee-Wright & Storr, 2009; Storr & Haeffele-Balch, 2012). After the 1995 Kobe earthquake pre-existing local leadership, community groups within the community, and policies and plans were found to be critical to positive outcomes (Yasui, 2007). High levels of community connectedness and relationships with power organisations were also shown to be vital to the response and recovery success (Yasui, 2007).

Examining disaster recovery of diverse geographies over years is complex and incorporates many disciplines, covering individual, social and economic recovery, as well as governance issues and land use changes (Yasui, 2007). Researchers are often tied to a single area of interest (Murphy 2007) and so the complex and integrated nature of urban socio-ecological systems is often not well explained. Social networks underlie the social capital of neighbourhood support and this exchange within social groupings varies from neighbourhood to neighbourhood (Kawachi et al., 2008). Studies outside of the disaster sphere also show differentiation across neighbourhoods (Ivory et al., 2011). Certain characteristics of neighbourhood matter, although what those are is still being established. What is known is that following a disaster, communities and neighbourhoods with strong social capital are better off than those without.

2.4 A model of community resilience

In a well-developed review of the literature, Wickes et al., (2010), identified the element pre-event functioning as foremost to understanding community resilience. This has been noted by others as a missing component to the research (Adger et al., 2005; Norris et al., 2008; Ungar & Liebenberg, 2009). Norris et al., (2008) suggest that a community's level of adaptation can be understood as 'population wellness.' They tie the concept of resilience to traditional areas of study, particularly public health, where successful adaptation is reflected in healthy patterns of behaviour and quality of life. This link between resilience and health and place is not new. Fran Norris and her colleagues (Norris et al., 2008) used a definition from public health (Goodman et al., 1998) to frame their definition of resilience, which emphasises the characteristics of communities to identify, mobilise and address a social problem. Here, a key component of this definition is the transfer and use of skills, knowledge and resources to set public health goals.

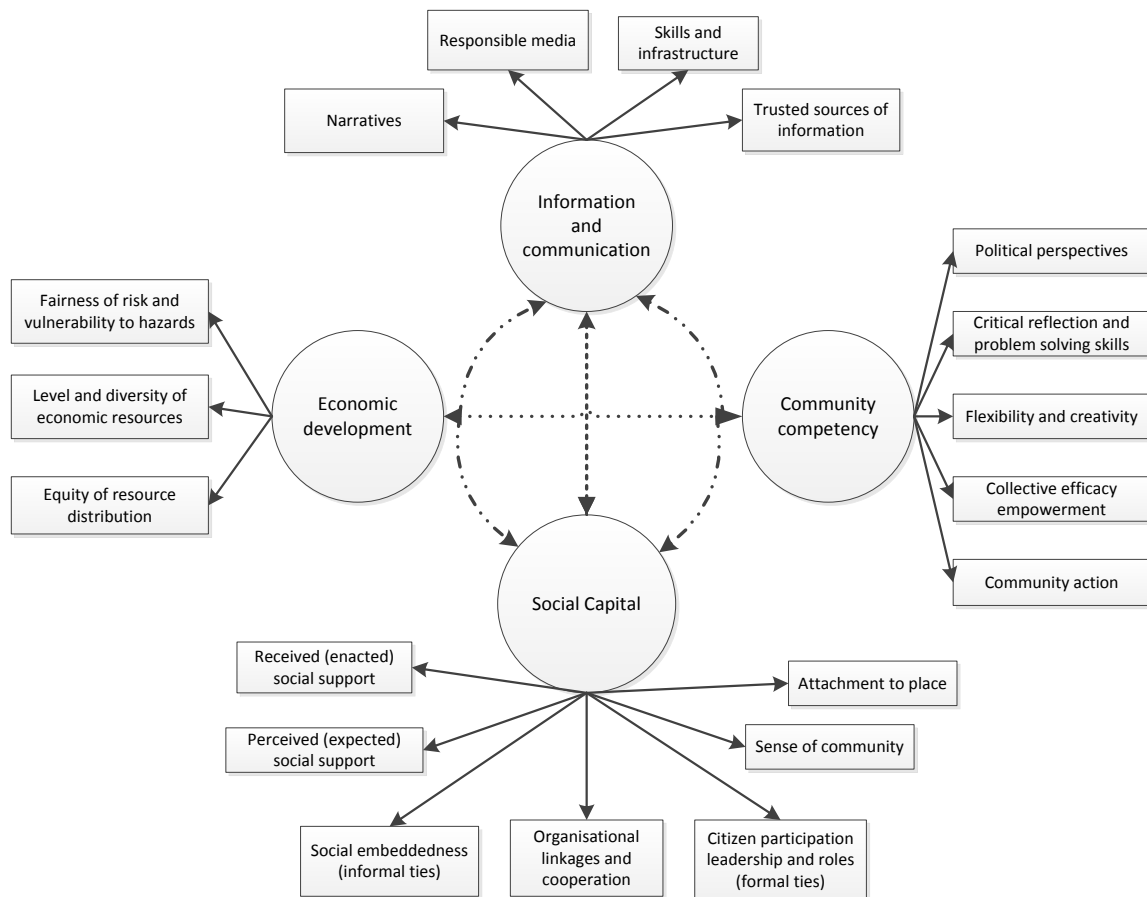


Figure 2.1: Community resilience as a set of networked capacity model

Source: Redrawn from Norris et al., (2008)

Norris et al., (2008) go further and describe a model of resilience through a set of networked adaptive capacities (see Figure 2.1). This adaptive capacity model contains the properties or attributes that have the faculty to change, or to use the ecological frame of reference applied by Gunderson (2000), to transform. This ability to adapt and transform from the current situation in response to a stressor is what is specific to community resilience. The model identifies four primary sets of networked resources: economic development, information and communication, social capital and community competence. Social capital and community competence come from the work of Brown and Kulig (1996) and Pfefferbaum et al., (2007) and will be discussed below. Two important components related to social capital are attachment to place and sense of community are then reviewed.

2.4.1 Social capital

Social relationships, social cohesion, social networks, social support, social ties and social integration are some of the many terms used to describe social capital, and are often used

interchangeably. All subtly contribute to or are connected to social capital. A significant body of literature exists on the positive outcomes associated with social capital, at both the individual and national level. Early work on social capital demonstrated its importance, showing that it led to improved outcomes in many fields (Bourdieu, 2011; Putman, 1993, 2000); including health outcomes (Bernard et al., 2007), governance and economic growth (Portes, 1998; Grootaert & van Bastelaer, 2002), reduced crime (Portes, 1998), educational attainment (Coleman, 1988), and coping with a changing climate (Adger, 2003).

Some argue that social capital is difficult, if not impossible, to measure directly (Grootaert & van Bastelaer, 2001; Coutts, Pinto, Cave & Kawachi, 2007). Most measures of social capital have used high level national data, although some do describe differences among and within cities (Wood, Burton & Cutter, 2010) and a few among neighbourhoods (Mohnen et al., 2011; Aldrich, 2010). There is no single point of measure for social capital because it involves structural components as well as cognitive characteristics (Brune & Bossert, 2009). The cognitive characteristics describe the perceptions derived from behavioural norms and expectations associated with reciprocity; trust, values, attitudes and beliefs that are shared with others, whether these are family members, neighbours or members of broader social networks. The structural elements of social capital are the tangible networks available to people, the networks of informal neighbourly relations, or more organised but not necessarily formal networks associated with civic associations (Putnam, 1993; 2000). These social networks are the foundation of social connectedness that occur within a community, whether geographically or relationship based. Social capital may not, however, always provide benefits to all, in certain circumstances high social capital may benefit the majority, but marginalised or peripheral groups can be excluded (Nagar & Rethemeyer, 2007).

Social interaction and connections through networks arise from the routine participation with others, in other words, networks evolve out of behavioural acts (Baldwin & King, 2017). It is through these interactions that the behavioural norms and trust of others within a neighbourhood are established. The foundational elements of the structural and cognitive forms of social capital are interwoven and complementary (Baldwin & King, 2017). Both need to be considered where in the neighbourhood these occur, who is participating in the networks, the shared norms and behaviours and the benefits that might accrue from participating (Portes 1998; Kawachi, Kennedy & Glass, 1999; Putnam, 2000; Subramanian et al., 2003). Even though the interest here is on the collective rather than the individual, it is important to recognise that it is the individuals and

households that create the social capital through their networking activities (Woolcock & Narayan, 2000).

The literature separates social capital into three distinct forms as it applies to neighbourhoods (Szreter & Woolcock, 2004; Kawachi et al., 2004; Aldrich, 2012) – bonding, bridging and linking capital. Bonding capital is the bond formed among those who share personal or spatial characteristics such as family, friends, neighbours, and work colleagues (Alder & Kwon, 2002). Coutts et al., (2007) describe how bonding capital helps to manage social behaviour, draw out mutual help and support as well as safeguard the vulnerable that are close or are similar in demographic characteristics and attitude (McPherson, Smith-Lovin & Cook, 2001). Bridging capital by comparison, occurs through the weaker social ties of individuals who differ in position, ethnicity or employment. Bridging bonds are formed through both informal and formal social interactions. Bridging ties are of the nature of social interaction found through civic or voluntary group activity such as sports affiliations or religious ties (Small, 2010). Granovetter's (1983) work on weak ties show that bridging ties were useful for employment opportunities, more than bonding ties. Bonding and bridging social capital are both structurally horizontal in nature, in that both bonding and bridging social capital are of similar status within the social sphere (Baldwin & King, 2017). Where there is greater social capital, especially bonding and bridging ties, communities tend to be more socially cohesive (Aldrich, 2012). The third form of capital, linking capital, involves the connections that individuals or organisations have that can enable access to decision makers, resources, power and status (Coutts et al., 2007).

Social cohesion is a broad concept closely aligned to social capital which is often used as a common policy goal although it is commonly used inconsistently or in contradictory ways within documents (Miciukiewicz et al., 2012). In some settings it has been defined as the extent to which individuals within a community feel they belong, trust each other, and live or function together without conflict (Kawachi & Berkman, 2000). Social sustainability researchers say that social cohesion, along with social capital, is based on social economic equity and inclusion (Bramley & Power, 2009). This inclusion leads to pro-community behaviours such as positive behaviour and relationships among residents where social support is provided through local networks (Dempsey, 2009). Sociologists also note that social cohesion at the neighbourhood level, is supported by conditions that promote positive and cohesive behaviour amongst those who live near to each other, or who are in proximity to each other (Lin, Cook & Burt, 2001). These conditions can occur at the level of social interaction among families and neighbours, through to the level of shared values and common purpose as found in participation in community events (Forrest & Kearns,

2001). It should be noted, however, that highly cohesive neighbourhoods can also be highly disadvantaged (Villarreal & Silva, 2006).

Social cohesion is apparent where there are quality interactions among individual, neighbourhood and community networks. Forrest and Kearns (2001) specify that a good indicator of cohesion is whether a community will come together to promote or defend a shared community interest, such as fighting a development. A socially cohesive neighbourhood also conveys positive wellbeing for residents. Here, residents feel they are part of their neighbourhood, thus creating a strong sense of community or of belonging and attachment to place (Scannell & Gifford, 2010).

2.4.2 Sense of place

Sense of community in this context is place based and relates to individuals and their sense of belonging to where they live and is built up from the physical characteristics of place (McMillan & Chavis, 1986). The bonding of people to places happens through individual, collective and cultural processes, most notably in relation to social interactions (Hidalgo & Hernandez, 2001). In response to continuing argument by researchers from different disciplines, Scannell and Gifford (2010) developed a general definition of sense of place using a three-dimensional framework of person, process and place. The first of the three elements comprise the individual and the extent of the collective meaning for who is attached; the second is the psychological process of cognition and behaviour in that attachment. The third is concerned with the characteristics and nature of a place.

For an individual, place whether part of the built or natural environment can be meaningful for a variety of reasons, Manzo (2005 p74) referred to this as the 'experience of place'. The events or experiences that occurred there may be important to how people are attached to a place (Tuan, 1974). The relationship to place has been broadly defined and includes concepts of attachment to place (Altman & Low, 1992; Hidalgo & Hernandez, 2001) place dependence (Stokols & Shumaker, 1981) and place identity (Twigger-Ross & Uzzell, 1996). Although some argue these are all the same (Bricker & Kerseetter, 2000).

The psychological process of place attachment is the way that people relate to place and researchers often refer to three psychological aspects – affect, cognition and behavioural (Hidalgo & Hernandez, 2001; Manzo, 2003, 2005). Tuan (1974) used the term 'love of place' to describe this connection. Environmental psychologists discuss the significant role of affect in the bonding of an individual to a place, the sense of wellbeing or pride (Hummon, 1992). Emotional attachment can also be illustrated in the literature where people have been displaced or must leave

where they live because of a disaster, war or famine (Fried, 1964). However, the social consequences of post war land or territory changes have been rarely researched, including how people react to their displacement (Lewicka, 2011). What is agreed is that the development of emotional bonds with place is a prerequisite for helping to overcome crises and to provide stability (Hay, 1998) and this helps to support local involvement (Brown, Perkins & Brown, 2003).

The question then is what role do the features of place help to underpin this sense of place through neighbourhood that helped to form the observed social capital, the collective action and mutual support. A more contextualised understanding is required of the features or characteristics of place that can influence the development of social capital that in turn contributes to community resilience.

2.5 Characteristics of place – the built environment

There are multiple theories on the influence and connection between people and place and how this connection can influence behaviour (Carpenter, 2013). The term built environment broadly refers to the urban built form, generally understood to include the streetscapes, housing, commercial and industrial buildings, roads, greenspace, parks and all other public and private spaces. The development of this urban domain is influenced by both national and local political ideology, policy and planning processes as well as the tradition of what has gone before and all are difficult to shift or change (Carpenter, 2013).

Developing the urban space has been central to planning and design since cities were first established and in the last century or so there has been an evolution of different planning movements shaping the growth of cities. New Zealand like other parts of the New World from the mid to late the 19th century, was influenced by the Garden City movement of Ebenezer Howard in shaping the development of towns and cities. As late as 1929, Clarence Perry, probably working from the Ebenezer Howard model, developed the concept of the neighbourhood unit (Lawhon, 2009). The idea of neighbourhood was introduced as the array of social, physical and institutional design forces active at that time (Lawhon, 2009). The concept of neighbourhood was reframed as a design tool that would provide opportunities for residents to socially interact, as the designers and planners of that time wished to avoid criticism as being socially deterministic. The standard neighbourhood design would generally include a primary school, open space, areas designated for institutional uses, such as churches, as well as commercial space. The neighbourhood unit has continued to be the basis for residential development since 1950s onward (Carpenter, 2013).

Research on the characteristics of place extends beyond the fields of planning and urban design. Quality of urban life, health, and physical and mental wellbeing of residents have all been studied and all are shown to be influenced by planning and land use (EEA, 2009; Currie et al., 2009). The social and physical characteristics of neighbourhood are now well established as a context influencing the health and wellbeing of residents (Macintyre et al., 2002; Diez Roux & Mair, 2010; Braveman, Egerter & Williams, 2011). Similarly, Barton (2009) has shown that where people live is a key determinant of health. Physical characteristics such as streetscape have been associated directly with activity (Saelens et al., 2003; Sallis et al., 2009; Owen, 2007). Local amenity also has also been associated with increased physical activity (Witten et al., 2012) as well as with social activity and mental wellbeing (Baum & Palmer, 2002; Cattell, Dines, Gesler & Curtis, 2008). The relationship between urban planning and how to provide for healthy resilient communities is complex, however, researchers in public health, urban planning and transportation all describe the importance of attributes of the built environment.

Barton (2009) was one of the first to place individuals within the context of place and the concomitant influence on wellbeing. Barton and Grant (2006) used the human ecology model of a settlement (see Figure 2.2) as a tool to show how urban settlements influence health and wellbeing. It is relevant here as it draws on a large volume of work with a clear visual to communicate the connection between the natural and built environment and health and wellbeing. Barton is arguing that decisions on the placement of infrastructure, households and public areas within urban spaces *are* important.

2.5.1 Features of the built environment

Specific characteristics of neighbourhood can influence and support social connections (Mohnen et al., 2011; Carpenter, 2013); and that the nature, strength and quantity of social connections are influenced by development patterns (Buckland & Rahman, 1999; Carpenter, 2012; 2013). Features that influence social connectedness include walkability, pedestrian friendly design and easy access to community facilities (Jacobs, 1961; Leyden, 2003). Although Talen (1999) found that while physical design can increase the probability of community building through interaction, increased sense of community does not necessarily happen. New Urbanism claims there are identifiable features of urban form that influence social connectedness, and include density, mixed use, street design and connectivity and especially walkability.

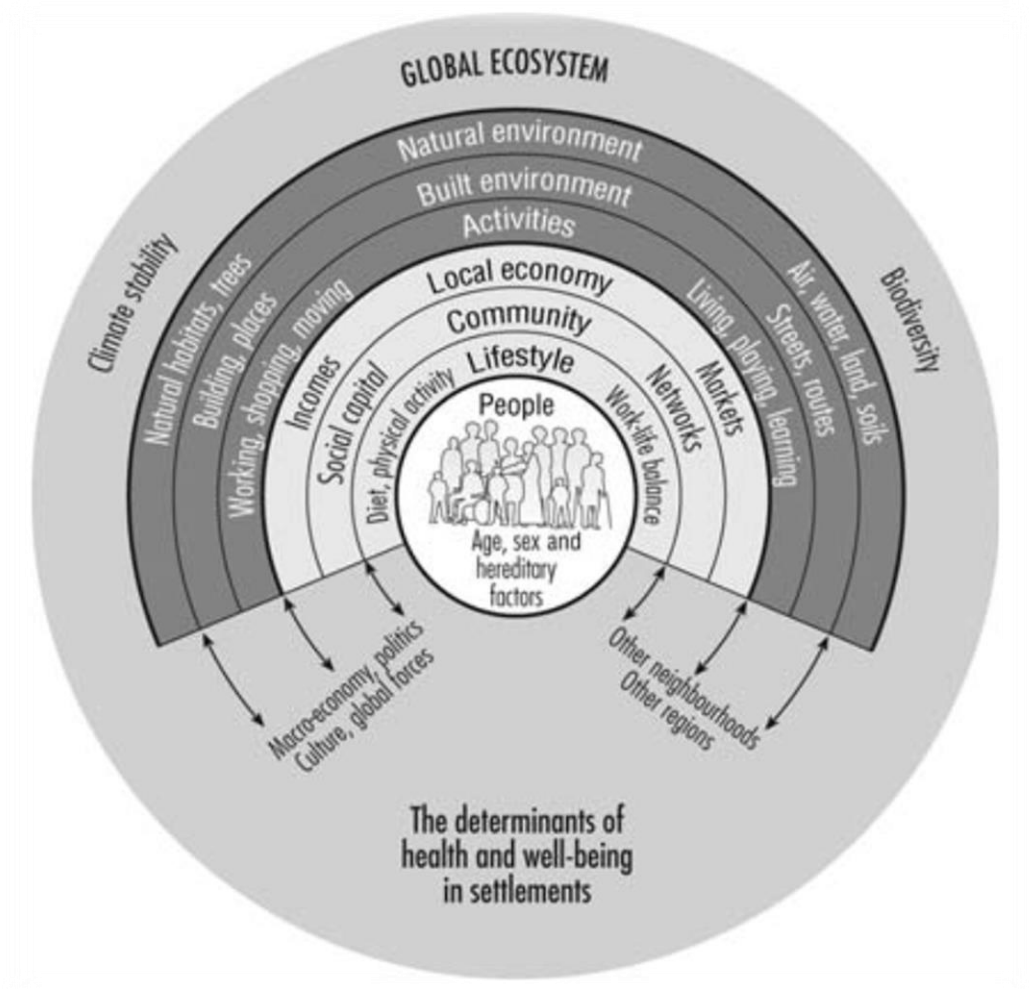


Figure 2.2: Human ecology model of a settlement

Source: Barton and Grant (2006)

Walkability

Walkability is a measure of how easily residents can walk in their neighbourhood - for recreation, or on purpose to a specific destination such as workplace, service facility or place for meeting others. More walkable neighbourhoods increase the chances of people bumping into others (Dempsey et al., 2011) and contribute to feelings of safety. Walkability can promote interactions with other locals and help to direct and increase neighbourly contact (Leyden, 2003; Rogers et al., 2011), this has been seen to enhance social capital and sense of community and belonging (Lund, 2002; 2003). Spending time in a neighbourhood helps people to feel they belong there and knowing others contributes to a sense of wellbeing (Rogers et al., 2011). There is considerable research in this area, indicating that local relationships do have a positive impact on wellbeing (Fowler & Christakis, 2008; Helliwell & Wang, 2010). Remarkably, Rogers et al., (2011) like Leyden (2003) found that those who are more sociable may choose to live in more walkable

neighbourhoods. In contrast, more conservative people were less likely to walk and were more likely to watch television.

Walkability as a concept is not particularly well defined, even though the literature expounds the importance of walkable environments. Forsyth (2015) reviewed the definition and research on what is meant by walkability, finding the term is used in multiple ways. These include walkability that is associated with safe and compact design; as an outcome for exercise or sociability; and also as a means for dealing with urban problems or enhancing solutions to urban issues. The value of walkability for this research fits into two categories; as an outcome for enhancing social interaction and for strengthening a sense of place that comes from walking to local destinations. Walking helps to develop and support a sense of belonging (Mehta, 2008). More walkable places have higher social capital as well as providing for the attendant health benefits (Berke et al., 2007; Rogers et al., 2011). Talen and Koschinsky (2013) provide three themes around studies of walkability: measurement, criticism and assessment of benefits. The last of these is of interest here and relates to traditional values of walking for health and wellbeing, civic life, spirituality and resilience, their point of reference was individual resilience.

Neighbourhood layout

The layout of a neighbourhood is a significant contributor to both walkability and local sense of identity. Where the design of the neighbourhood and physical infrastructure provide conduits for individuals to meet each other their social capital increases (Jarema et al., 2009). It has been shown that more walkable neighbourhoods score better on every measure of social capital. Layout can help to bring people together, with many arguing that a grid pattern is important to helping to build a sense of community. Suitable layout can help individuals to orientate and develop a sense of their territory (Kaplan & Kaplan, 1992), this then assists with sense of belonging as people hate being confused and disorientated. Accordingly, street patterns divide and connect neighbourhoods and in doing so influence how people move and interact with others in the neighbourhood (Southworth & Owens, 1993).

Streets hold several functions, for mobility and transport as well as for this interpersonal exchange (Southworth & Owens, 1993). Streets were once considered places to socialise and to carry out civic engagement and activities (Jacobs, 1961; Lynch, 1984). Appleyard et al., (1981) was one of the first to reveal that traffic volume also affected neighbourliness. As well as taking space, cars dominate the psychological space because of speed or associated dangers. Studies replicating Appleyard have shown increasing traffic volumes can create a barrier to social interaction

(Bosselman, Macdonald & Kronmeyer, 1999). Streets that are wide, not only encourage speeding but also discourage walkability due to the greater distances needed to travel by foot. Traffic on a street also impacts on children's ability to play (Tranter & Pawson, 2001). This has far reaching implications as playing on the street and within the neighbourhood has been shown to be important for children, helping them develop broader trust and norms; as well as providing continuing benefit through their lives (Hooper, 2014).

Social infrastructure and amenity

The geographical location of social infrastructure, or what are also termed opportunity structures (Macintyre & Ellaway, 2000, 2003; Baum & Palmer, 2002; Bernard et al., 2007), such as shops, parks, schools, health and community services are determined by government planning and policy and business decisions. These features are all important as meeting places, for both chance meetings and deliberative or prearranged meetings (Witten et al., 2003), and they hold strong social value across cultures (Abu Ghazzah, 1999; Williams & Pocock, 2010).

Oldenburg (1989; 1991) introduced the notion of these as the third place or space, in order to describe or highlight an important mechanism for community development or community formation. Oldenburg contrasts the social surroundings of these places with the two other main social environments – first the home, and the second the workplace (for adults) or school (for children). He argues that the third place is essential for civil society and engagement, democracy and establishing feelings of a sense of place, all of which are important for developing local community. Others also describe the influence of local amenities in promoting social interaction (Halpern, 1995; Warin et al., 2000; Witten et al., 2003). In other words, these third places can hold more than one function (Hickman, 2103), especially in deprived neighbourhoods where alongside a community use, this can have a social function by positively affecting the attitude and behaviour of residents to provide social benefit (Hickman, 2013). Harris (2008) has documented this especially for elderly people.

A neighbourhood positioned with easy access to social infrastructure will theoretically have higher levels of social capital, and therefore some neighbourhoods will be more liveable than others, especially those with facilities internally or centrally located (Witten et al., 2003; Kearns et al., 2009; Witten, Pearce & Day, 2011). It has been shown clearly that peripherally located facilities do not help people to feel that they live in a neighbourhood (Forrest & Kearns, 1999). It can be said that the distribution of social amenities is a social determinant of health (Witten et al, 2011).

A community is considered more resilient where there is walkable access to social infrastructure (Rogers et al., 2011). This is shown in Figure 2.3, where walkable destinations support a healthier lifestyle and are associated with developing a sense of community (Leyden, 2003; Lund, 2002; Wood et al., 2010). Others have found strong positive relationships between walkability, the local availability of shops and services and the density of social networks (Calve-Blanco, 2009). It is there, they can meet others by accident, or arrangement and this is key to interaction and relationships. Helliwell and Wang (2011) describe the patterns of social interaction are denser and more local than is often assumed in the literature. The ability to walk in a neighbourhood is important to sociability and getting to know others around home (Nasar & Julian, 1995)

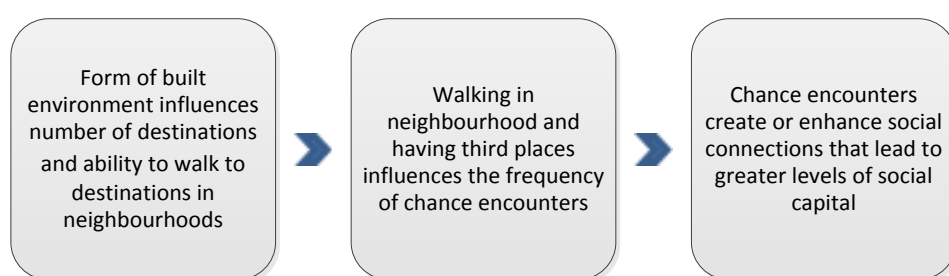


Figure 2.3: Logic behind the link between walkability and social capital

Source: Rogers et al., 2011

Identifying exactly which of these features help build social connectedness within a neighbourhood is complex. Schools, for example, function as local educational institutions but are also significant places to both children and parents (Witten et al., 2007), with local residents being attached to them (Bondi, 1987). Schools are also central to sustaining social cohesion of neighbourhoods (Kearns et al., 2009), primary schools especially are informal meeting places (Witten et al., 2001) and small schools and small local school zones have been shown to help to keep people tied to their neighbourhoods (Kearns et al., 2009). Schools, therefore, in addition to their educational role in the community, also contribute to the broader health and wellbeing of a community because of the social activity associated with them (Williams, 1999).

Natural and greenspaces also provide opportunities for people to meet with others as a matter of routine or opportunity (Sugiyama et al., 2010). Natural and green space through parks and reserves provide places for social interaction thereby strengthening social connections (Maas, 2013; Petersen, 2013). Open spaces with a naturalness component need to be open (Baum & Palmer, 2002), accessible (Karuppannan & Sivam, 2011) and well maintained so people can feel safe (Dempsey et al., 2012). The physical quality of such places may contribute to community

attachment and can symbolise the routine cultural patterns of use that provide for a sense of community (Fried, 2000).

2.6 Place-based understanding of community resilience

What then is the relationship between the features of the built environment and access to social infrastructure to helping to develop social connections and sense of place? Generally, the relationship between place, social connections and resilience to disasters is not very well described. Largely the literature is supportive that social connections and networks underpin community resilience and that the built environment influences these connections. Theories exist to describe this relationship although there are limitations in the current models, because as discussed earlier the focus is usually on people and their actions. Research on resilience does not usually consider the place based interactions, they may observe the result but not what underpins the action. The spatial context is not included, how does the place where people live influence their capacity to respond and recover.

Social connections and networks play a role in post disaster resilience and recovery (Buckland & Rahman, 1999; Nakagawa & Shaw, 2004; Dynes, 2005; Kage, 2010). Close social connections, such as knowing neighbours help provide for each other, to share information, as well as tools, water and food (Chamlee-Wright, 2010). Individuals with multiple and complex local social ties are less vulnerable than those with narrow connections (Tatsuki & Hayashi, 2002). Similarly, people with access to a large and dense network of relatives increase their chance of receiving support (Hurlbert, Haines & Beggs, 2000). Paruchuri (in Aldrich, 2012) used the term, collective coping behaviour, to describe these connections in a study of 600 people, following Hurricane Andrew.

Communities that are more resilient display collective action, social capital is a core element of this resilience (Aldrich, 2010). An early study by Sherraden and Fox (1997) compared five communities impacted by flooding where social networks were effective because of the availability of a place to organise. Then Klinenberg (1999) researching the 1995 Chicago heat wave described how proximity to and knowing neighbours mattered and that neighbourhoods with more community infrastructure were better off. Klinenberg's (2003) next study found many of the 485 deaths occurred in the poor African American neighbourhoods with little poor social capital and poor public amenity. Equally poor Hispanic neighbourhoods with greater levels of social capital had better outcomes cooperate with one another. Similarly, neighbourhoods described as less resilient tend to take time or do not mobilise leadership or collective effort and

wait for others to assist (Chamlee-Wright & Storr, 2010). After the 2010 Haiti earthquake, survivors organised watch groups to protect people and their belongings (Burnett, 2010). Local communities can also serve as the connection between residents and NGO's support, as seen following reconstruction after the 2004 Sumatra Andaman tsunami (Takahashi et al., 2007).

Responses are not constant across neighbourhoods within a city (Rovai, 1994; Aldrich & Crook, 2008; Pais & Elliot, 2008; Wood; Burton & Cutter, 2010). Residents in some neighbourhoods of Kobe following the 1995 earthquake planned cooperatively while others waited for the official response (Olshansky et al., 2006). Certain characteristics of neighbourhood do matter although what those are is not well established. What is known is that neighbourhoods less socially connected are worse off than those that are. Within disaster affected areas some neighbourhoods or towns respond and/or recovery quicker and some show remarkable resilience while others never recover (Edgington, 2010). The link between the patterns of development and differing levels of community development, communities with higher levels of human, physical (access to facilities and social infrastructure) and social capital were better equipped to cope with a disaster (Buckland & Rahman, 1999). Survivors relay that it is social infrastructure and not economic or disaster related obstacles that is the most important for recovery, denser social networks work towards a faster recovery (Carbrera, 2013). What is missing is an understanding of how place can help to shape sense of place and facilitate the social ties and networks that can be utilised when needed such as following a disaster.

2.7 Conclusion

This review of the literature suggests that a gap exists in understanding the relationship between neighbourhood and social networks in the context of helping to build community resiliency. Some write that it is difficult to comprehend the complex nature of hazard risk as occurs relatively infrequently (Carolan, 2007; Cutter, 2001), while others state disaster prevention especially from earthquakes is impractical or idealistic. A large environmental hazardous event like an earthquake cannot be prevented, however, it is possible to apply what Hewitt (2013) terms a preventive culture. Hewitt describes this as moving disaster work to protection and preparedness ahead of an event or emergency. Risk reduction should be placed into everyday practices to reduce vulnerability while at the same time, strengthening the resilience of communities.

The importance of the need to improve our current understanding of the social dimensions of resilience to hazard and climate change is recognised (Glavovic, 2011). At the same time evidence is mounting on the need for health and social promoting community design to promote quality of

life (Witten et al., 2003), perhaps the same can apply within the context of community resilience (Cox & Perry, 2011).

The following chapter outlines the setting for this research.

Chapter 3: Context - City history, earthquakes and planning framework

3.1 Introduction

All cities have their own distinctive pattern of growth evolving from geography, history and the planning framework under which they were developed. The subsequent migration patterns and local and regional politics also influence the character of a city. This chapter provides the history and background to Christchurch and describes the change that occurred following September 2010, when a series of large earthquakes hit the region that caused significant loss of life, damage and disruption. These earthquakes were a pivot point, altering the trajectory of development that had been planned for the city. This chapter is in three sections, the first focuses on the history of Christchurch's development. The second section describes the earthquakes sequence that had a dramatic impact on residents and the physical form of the city. The last section gives context on the post-earthquake planning.

Christchurch is New Zealand's second largest city and the main urban centre for regional Canterbury and the South Island. Christchurch has a population of slightly more than 362,000 (StatsNZ, 2013). When Christchurch is combined with the urban areas of the Waimakariri and Selwyn Districts, the greater Christchurch population is 465,800 (StatsNZ, 2013).



Figure 3.1: Christchurch and surrounding districts of the Canterbury region and the greater Christchurch area

3.2 Memoir of Christchurch: history, development and planning

Christchurch is a water city built on a low lying coastal system and flanked by two ancient volcanos that make up Banks Peninsula to the east. An alluvial plain leading to the Southern Alps is to the west. The braided Waimakariri River at different times has flowed across to where the city sits today creating a landscape of salt and freshwater wetlands, sand dunes and old gravel beds

(Dionisio et al., 2015).⁶ The first people to come to the site of Ōtautahi/Christchurch around AD1000 were hunters who cleared the forests in search of moa.⁷ Ngati Māmoë and Ngāi Tahu arrived from the North Island somewhere between 1500 and 1700.⁸ By 1800, Ngāi Tūāhuriri a sub-tribe of Ngāi Tahu controlled the coast from Te Waihora/Lake Ellesmere south of Christchurch to the Hurunui River in North Canterbury. The track between their two settlements at Kaiapoi and Rāpaki followed a path between swamps and the rivers Avon/Ōtākaro and Heathcote/Ōpāwaho using Pūtaringamotu or Riccarton Bush (part remains today) as a source for food. Ōtautahi/Christchurch was named as the special territory of Tautahi. The full name Te Whenua o Te Potiki-Tautahi was later shortened to Te Potiki Tautahi and then shortened again to Ōtautahi, the name we have today.

In 1848, a private initiative called the Canterbury Association, discussed the potential for a Church of England settlement in New Zealand. The 1850 map for the new city of Christchurch was completed using the Benthamism utilitarian philosophy of the Garden City; to provide the greatest happiness for the greatest number of people (Falconer, 2015). Sites were mapped out for a cathedral, school, civic buildings, parks, tree lined avenues and a marketplace. Early maps show the original 1250 acres to be developed was mostly dry and surrounded by swamp. As the city grew these swamps were systematically drained, the springs capped, streambeds boxed in and native vegetation cleared. As the city continued to be settled through the late 1800s, the places of importance to Ngāi Tahu were largely ignored, drained and built over. In this process much of the significant ecological character was also removed.

The Canterbury Association's desire to get away from the industrialisation of Britain and its attendant social constructs led to a built form of wide straight streets and individual housing. With a shortage of surveyors available, a simplified process was applied to map and set up the systems for assessing and recording land tenure (Densem, 1973). Both Canterbury and Westland were surveyed to a grid pattern and these large straight grid lines created subdivisions that ignore the natural boundaries of hills, wetlands and streams. This large grid pattern still determines the much of the structure of Christchurch today. From about 1870 through until WWI, a colonial Christchurch was developing. Prime Minister Julius Vogel's public works programme built branch railways across Canterbury connecting the city with a growing rural interior.

⁶ Contents from this section have been published in Dionisio, M. R., Kingham, S., Banwell, K., & Neville, J. (2015). The potential of geospatial tools for enhancing community engagement in the post-disaster reconstruction of Christchurch, New Zealand. *Procedia Engineering*, 118, 356-370.

⁷ Moa: large birds (up to 200+ kilograms and 3 metres in height) endemic to Aotearoa/ New Zealand.

⁸ <http://my.christchurchcitylibraries.com/christchurch-brief-history/> accessed 16/08/2016

Initial settlements emerged where the ground conditions were favourable in what is now the Central City and Riccarton Bush. Settlements in Papanui, Upper Riccarton, Sydenham and Woolston followed (Densem, 1973), Figure 3.3 provides a map of the suburbs referred to in this thesis. The swampy areas of Spreydon, St Albans and Richmond were not developed until settlers found the means to drain the wetlands. Likewise, further east in Bromley, Burwood and Wainoni were all sparsely populated until well into the early 1900s. By 1915, the shape of Christchurch was well established with settlements formed as independent boroughs (Densem, 1973), each with different subdivision standards. Boroughs went about widening the early narrow residential streets, although some remain in Merivale, St Albans and Sydenham. Amalgamation into the Christchurch City Council of the smaller boroughs started with Opawa in 1916, then Papanui (1921), New Brighton (1941) and Sumner (1945). Local government was still relatively fragmented until full amalgamation in the 1980s (Christchurch City Plan, 1991). Banks Peninsula was the last to join in 2006.

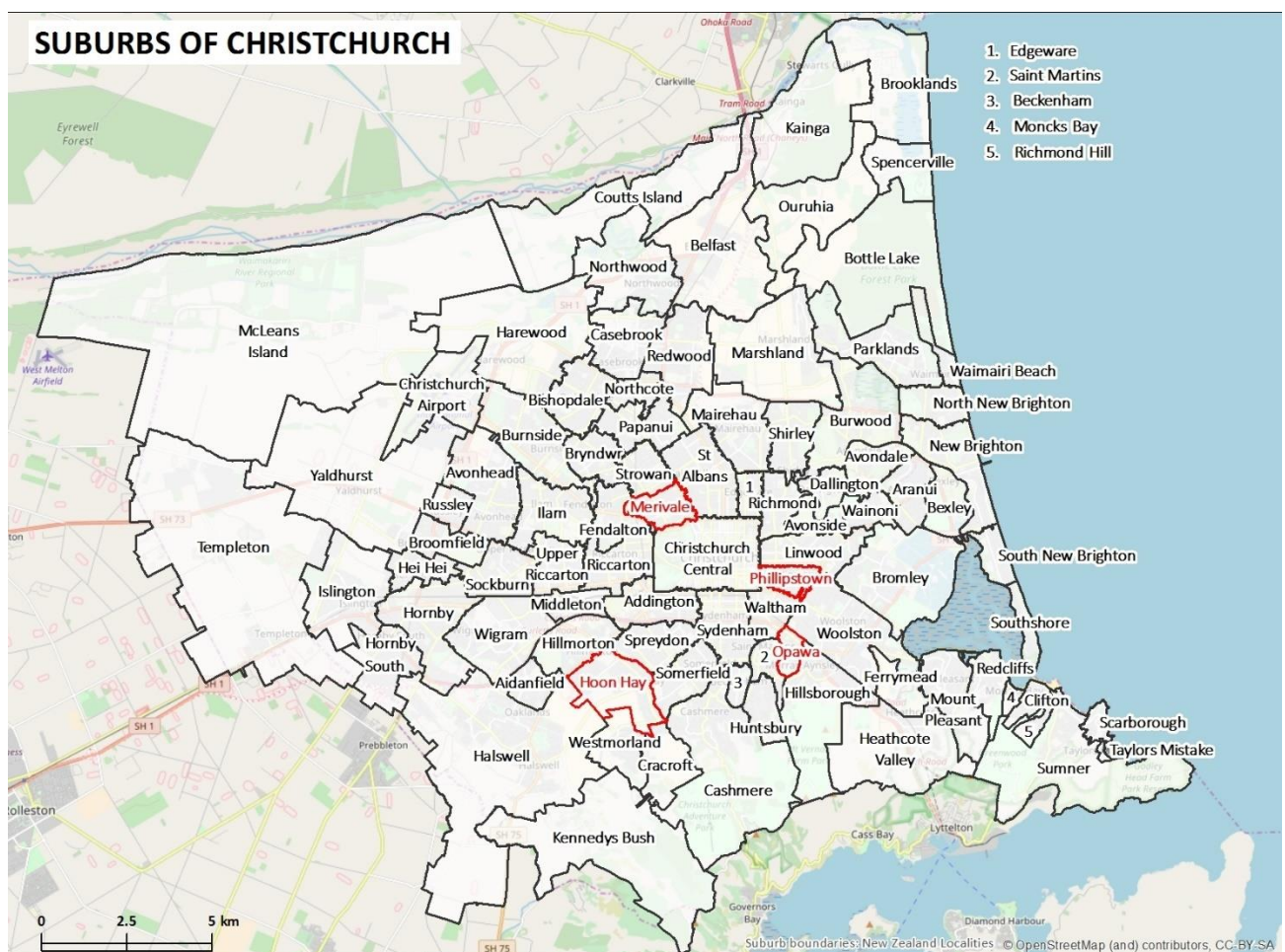


Figure 3.2: Suburbs of Christchurch

Source: StreetMap

Transport has had a significant influence on the form of suburban Christchurch, with housing spread along newly established tram routes (Forer, 1978). The residential population increased from 20,000 in 1886 to 120,000 in 1926 creating a building boom. More homes were needed due to the decrease in family size, the migration of people from rural areas to the city combined with the need to replace and modernise deteriorating early poor-quality houses (Densem, 1973). To deal with the housing shortage, the Department of Housing Construction subdivided and built extensive housing in Riccarton, Linwood, Phillipstown, Avonside and Bryndwr. Between WWI and WWII, housing styles changed and started to infill the outer suburbs, as car ownership increased at the same time as improvements were made to general electricity and roads. This detached single storey wooden villa style housing on wide streets continued to be built as the suburban form, like the colonial and unique aspect of other Australasian cities. The fence also appeared with residents valuing their own home on private land (Densem, 1973). The large grid pattern of the early surveyors meant that houses were also established on back section connected to the street by a long drive or lane way. The new urban residents also shifted the political influence, with the urban liberal growing faster than the more conservative rural (Densem, 1973). At the same time, there was a move toward a having greater sense of New Zealand identity (Wiles et al., 2009).

A comprehensive change in planning arrived in 1953 with the Town and Country Planning Act (1926). This involved the general regulation and control of urban development with land use plans, that aimed to protect the value of the rural areas (Memon & Gleeson, 1995) that still engaged with the Garden City movement. The Act directed all local authorities to prepare a land-use plan based around prescriptive zoning schemes with standards for housing and a road hierarchy to manage traffic. These early regional planning schemes also designated rural zones to limit the city's extent and encourage urban consolidation, to protect the greenbelt and conserve rural areas (Puentener, 1993).

Between 1951 and 1971, the population grew by a further 60 percent, and suburban expansion was used to accommodate this growth. The Ministry of Works directed much of the development, laying out the infrastructure of land including sewer, electricity and roads. At the same time central government continued to build State houses. Local government were also given responsibility to provide infrastructure, although the money was still controlled by central government (Memon & Gleeson, 1995). There was no coherent policy framework and funding was often tied to election promises and political sponsorship (Memon & Gleeson, 1995). The 1977 revision of the Town and Country Planning Act changed direction, although the Act recognised the diversity of places, the focus was now on economic development.

From the 1970s, development continued in an ad hoc way with no coherent process or a single authority having oversight. Growth was unplanned as housing fitted into the fragmented blocks of rural land as it became available (UDS, 2006). In line with growing car ownership, the city continued to expand to the northwest and west into Waimairi, Papanui and Riccarton, taking until the late 1990s to fill in these outer suburbs. Some attempts were made in the 1930s to introduce a street hierarchy resulting in cul de sacs and some local streets. Generally, however, the road form was wide and long and mostly suited to car use. Densem, (1973) for his thesis that examined a proposal for a new residential subdivision described a loss of streetscape for walking and personal scale, where car use and sprawling development led to the segregation of daily activities around home, work and recreation. Although between 1959 and 1991 the spatial policies of successive regional planning authorities did aim to consolidate some growth within the built-up parts of Christchurch, here multi-unit dwellings replaced older homes in the inner-city suburbs of Linwood and Phillipstown.

At the same time the central city changed due to low investment and the shift to private transport. Up until the 1960s workers arrived into the central city by train. With greater car use significant employment relocated outside of the central city. Two large department stores closed as shopping also moved from the city centre to suburban malls, Riccarton opened in 1965 and Northlands in 1967. A significant loss to the central city occurred in the early 1970s when Canterbury University shifted to the new Ilam campus in the west of the city.

3.3 Changes to planning

The current planning framework initiated in 1991 is complex. The main statutes required to manage growth are the Resource Management Act 1991 (RMA), the Local Government Act 2002 (LGA) and the Land Transport and Management Act 2003 (LTMA). The RMA, the most significant piece of legislation sets out how to manage natural and physical resources. The Act outlines proposals of national significance, the roles and responsibilities of the three tiers of government, the processes around consents and council plans and how environmental outcomes are monitored. Central government is responsible for administering the Act and provides the national direction for local government to manage the effects of land use and subdivision.

The RMA's amalgamation of two differing policy objectives of free market and environmental management is unusual. It also cuts across environmental management and urban planning (Memon, 1993). This paradox is not unusual in New Zealand and much has been written about New Zealand as a social experiment, including the original intent of the Garden City as a change

from the United Kingdom (Falconer, 2015). Under the RMA, local government is required to develop a district plan to control development through rules. But with the focus on the management of natural and physical resources has come with a concomitant loss of planning for the urban environment. Also under a neoliberal agenda, the RMA was enacted with little underlying policy guidance. This has meant that local governments across New Zealand have developed their own separate and often disparate plans. The Environment Court has been left to provide the policy intent through precedence rather than focusing on a determined policy direction (pers comm⁹). The result has been that planning responds to individual developments with little context or reference as to how they could contribute in the broader sense to community development. Oram (2007) described this planning regime as reactive rather than strategic. Others state that although the RMA is an enabling act, it has been less than satisfactory in practice (McDermott, 2000).

In December 2002, the LGA (2002) was introduced to support local government planning and management, to help with decision making through a more strategic approach. The Act requires all local governments to have long term council plans that identify their activities over a 10-year period. The LGA requires councils to outline their funding arrangements, to work through the scale and extent of investment needed to provide new infrastructure as part of delivering on Long Term Plans. It also affords the ability to collect development contributions, this requires having an understanding the cost of growth, the management, location and timing of infrastructure and services.

Planning for greater Christchurch through the 1980s and 90s proved to be difficult because of divisions among councils, specifically with the early Canterbury Regional Council (Environment Canterbury). In a complicated system, regional councils are also managed under the LGA, creating tension around hierarchy and responsibilities. This was observed when Environment Canterbury attempted to integrate planning for Christchurch and surrounding districts. Two early attempts to develop an agreed strategic urban development process failed. At the same time litigation issues between Christchurch and Environment Canterbury arose over several new developments. A significant challenge was then made by Environment Canterbury against Waimakariri District that had relaxed its urban containment policy (Swaffield, 2012). The Environment Court approved the private plan change for Pegasus Town, a large development 30 km north of Christchurch, away from employment and transport. The Court ruled against the

⁹ Source - informal interview with a retired environment court judge.

Environment Canterbury stating there was poor policy basis for refusing the development (UDS, 2006).

The Christchurch City Plan, as one of the first to be developed under the RMA, adopted a very laissez-faire approach to commercial activity. This allowed the continued development of large scale commercial precincts such as the malls and commercial centres centred within residential and industrial areas (Falconer, 2015). The malls continued to be extended, in 2004 Northlands Mall almost doubled in size to 42,000 square metres of retail space (Kiwi Property, 2015), and Westfield Riccarton underwent two major expansions, in 2004 and 2009. Hornby Mall in Christchurch's south west has also expanded by 30 percent to become the fourth largest mall in Christchurch (Law, 2012). Christchurch now has more commercial shopping space in Australasia per head of population (Environment Canterbury, 2008). Even so prior to the earthquakes, the central city still had high employment concentration, the Cathedral Square census area unit had the most workers in Canterbury, and was New Zealand's third-largest employment centre (StatsNZ, 2015).

Over the decades, attempts have been made by Council to revitalise central Christchurch (Falconer, 2015). Council working with developers encouraged investment in bars and restaurants, as well entertainment venues and heritage buildings, some of which provided a point of difference from the large-scale suburban malls (Falconer, 2015). Central Christchurch also had some residential living, with a small increase in residents from 5,667 in 1991 to 7,653 in 2006 (StatsNZ, 2015). A Central City Revitalisation Strategy aimed to increase residential population to 30,000 by 2026 to bring a greater diversity of living environments (CCC, 2006). Prior to 2011, central city residents were at each end of the social deprivation scale, living in expensive apartments near to Hagley Park or in cheaper smaller units, older housing or above commercial business in the city and to the east of the centre. The council was also beginning to recognise the growing social, economic and environmental costs of continuing to provide infrastructure for greenfield low-density development. Work was underway to facilitate an increase in a denser development pattern (Preval et al., 2010). At the same time, there was recognition of the need to integrate land use planning with transport planning (UDS, 2005).

3.3.2 The Greater Christchurch Urban Development Strategy

In 2004, Christchurch City, Selwyn and Waimakariri District Councils were in the process of, or had just completed separate plans for growth. There was no agreed vision for a wider area that functioned geographically as a social and economic community. The then mayor of Christchurch,

Garry Moore refused to sign off on a proposal to prepare a Regional Policy Statement for Canterbury that included an urban planning component (Moore, 2016 pers comm)¹⁰. He received the proposal already signed by the other Mayors of Canterbury; Moore was to be the last to sign and refused.

Garry Moore: *I had just read a wonderful planning book called “The Regional City”, this book argued that we artificially divide up areas into towns and cities and treat them as different animals. However, when a person in, say Rangiora, wants to travel into Christchurch they couldn’t give a toss about which area is what or who planned it. They just want to travel freely on roads, which are coordinated by authorities.*

A lack of trust among district and the regional council continued when Environment Canterbury attempted to produce this plan with little input from Christchurch or Selwyn or Waimakariri District Councils (Salmon, 2015). Moore explained he was worried that years of opportunity to plan together would be lost. He went back to the next Mayoral Forum with a proposition where all relevant parties including Environment Canterbury, would sit as equals at the table to develop a new planning framework. This eventually became the Greater Christchurch Urban Development Strategy (UDS). Environment Canterbury, Christchurch City, Banks Peninsula, Selwyn and Waimakariri District councils, the then Transit New Zealand (now the NZ Transport Agency) and Te Rūnanga o Ngāi Tahu formed a partnership for long term planning under the UDS. Areas of concern were the growing costs of development, the loss of high quality agricultural soils and a development pattern considered to be unsustainable. The aim was to manage an expected extra 120,000 people over 30 years, an aging population and a 50 percent increase in traffic growth with the attendant infrastructure costs.

A first step was to establish an Urban Development Forum, the governance group. Staff from all councils started with an internal process to examine the issues needing management. The analysis was published in 2004, in an *Introduction to Issues* booklet, which aimed to raise public awareness before community consultation was carried out. One assumption was that Christchurch required a well-defined development proposal because of the assumed lack of natural boundaries. In fact, Christchurch boundaries include the Port Hills to the south, the coast to the east and unconfined aquifer west toward the airport, all of which inhibit growth. The issue was beyond the city borders. The aim was to manage the release of development on the edge of the city and around the townships of Selwyn and Waimakariri Districts all within commuting distance to the city.

¹⁰ From informal interview

A stated goal was to increase the population within central Christchurch from around the 8000 in 2005 to 20,000 by 2026. Promoting this pattern of growth had been very difficult, as was counter to market forces largely driven by a few developers. As part of the early consultation, developers stated their preference was for continued greenfield development where they could continue to realise 30 to 40 percent profit margins.

The developers explained they preferred greenfield over the higher risk and less profit attained from inner city developments. At the same time economic analyses showed new greenfield development was being subsidised by existing rate payers, in part because of Council's insistence on a city-wide developer contribution policy. The second stage of the process involved broad community consultation.¹¹ The issues were summarised in a booklet and widely distributed to the public in early 2005 (Figure 3.3). The community was then asked to choose from four potential growth development options: concentrated, balanced, dispersed and business as usual. Figure 3.4 presents the maps, these can also be sourced from the www.greaterchristchurch.org.nz website.

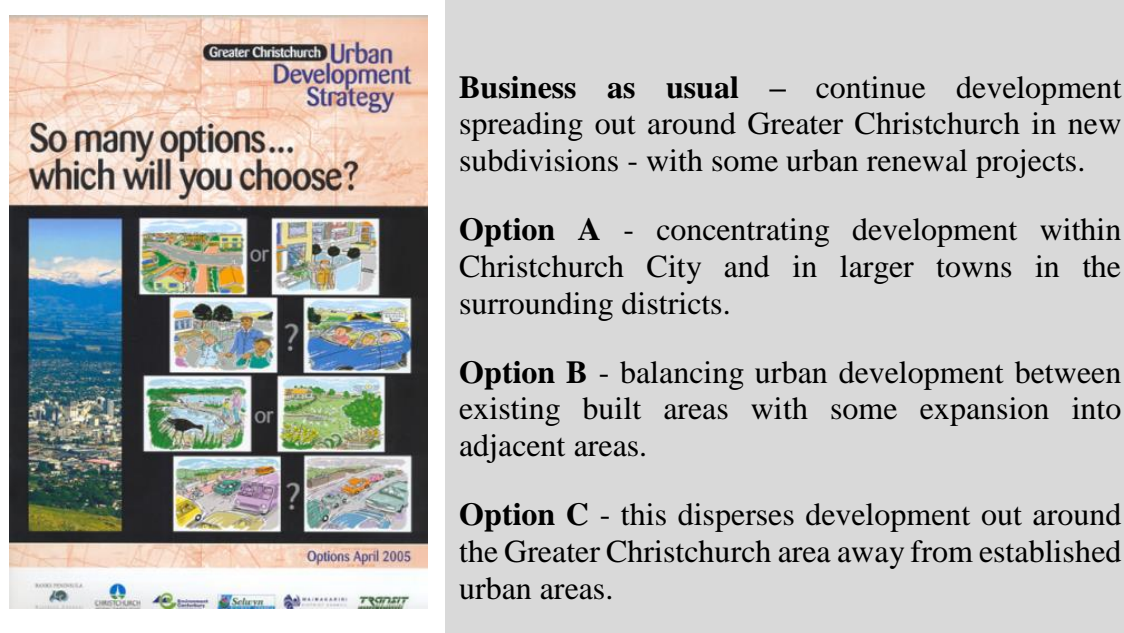


Figure 3.3: Urban Development Strategy booklet and summary of options

Source: UDS Forum (2007)

Business as usual or BAU represented the current rate of growth with 75 percent in greenfield between 2002 and 2006 (UDS Forum, 2007). Option A called for 60 percent intensification and growth within existing urban areas, the remaining 40 percent in greenfield. This option also proposed to stage the release of greenfield to maintain some demand for that living style. Option

¹¹ See website for more information - www.greaterchristchurch.org.nz

Option B aimed to balance future urban development between existing built-up areas with some expansion into adjacent areas. In contrast, Option C dispersed development out around greater Christchurch and away from established areas. These options were kept deliberately vague yet distinct, to help community decide on an option.

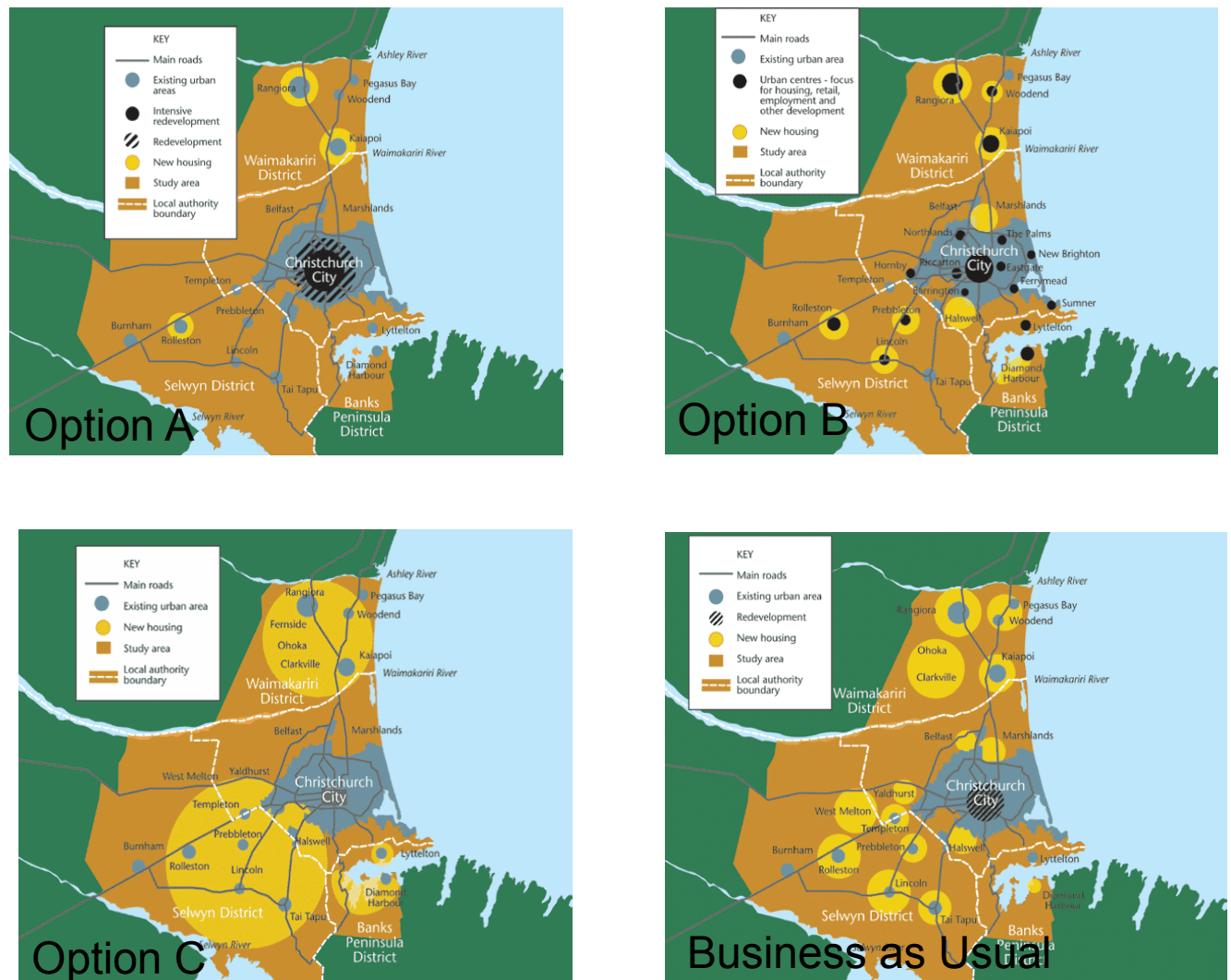


Figure 3.4: Urban Development Strategy Options

Source: UDS Forum (2007)

Nearly two thirds of the 3250 respondents chose Option A. This came as a surprise to governance and UDS staff who had anticipated less public support for a more consolidated growth form. Submissions from groups and individuals expressed their desire for a more compact city, a clearly defined boundary and well defined existing urban centres (UDS, 2016). The public also asked for the protection of environmental values such as water quality and productive soils, better travel choices including more affordable means, and enhanced community character and sense of place.

They asked for quality urban design and well-planned community facilities integrated with land use. Those who selected none of the options preferred a stronger focus on sustainability and social outcomes.

Which Option	Christchurch %	Selwyn %	Waimakariri %	Banks Peninsula %	Total
No answer	8	8	8	10	8
Business as usual	2	2	4	2	2
Option A	63	61	56	63	62
Option B	21	24	29	16	22
Option C	2	2	1	2	2
None of these	4	3	3	7	4

Table 3.1: Preferred UDS options by local government area

Source: UDS Forum (2007)

A Community Charter derived from the feedback introduced the vision, guiding principles, and strategic direction. Focusing on improving the quality of life, the UDS consultation revealed a desire for a collection of mixed use villages. The Charter outlined how the community were clear that they should decide the city form and not developers. Other points made were to retain the character of established suburbs and towns, for community facilities to be placed early in developments for social well-being and the importance of urban design to planning for public transport, especially walking and cycling.

In 2006, a broadly agreed settlement pattern was developed through two week-long workshops. A design-led approach was employed using statistics data, research and consultation findings and with over 100 technical staff and experts from the partners, government agencies and consultants. Representatives of Waimakariri and Selwyn Districts disagreed with Option A, and attempted to delay developing the strategy (Salmon, 2015). Submitters from Selwyn expressed a similar desire to city residents, while Waimakariri residents had a stronger preference for Option B (UDS, 2006). Given a significant amount of land had already been zoned for subdivisions across the districts, the final agreement came together somewhere between Options A and B.

The *Greater Christchurch Urban Development Strategy* was released in 2007 with governance arrangements and key actions. Two key actions were to prepare a new chapter to the Canterbury

Regional Policy Statement (CRPS) ¹² and to make changes to the Regional Land Transport Strategy (RLTS). Changes to the district plans and council long term plans would follow. The UDS also committed the partners to the principles and practice of urban design, to develop and enhance social and retail activity centres, and new employment centres with the integration of transport. The UDS was adopted by all council partners, with each required to carry out the implementation of actions relevant to them. Together they would prepare the new chapter to the CRPS.

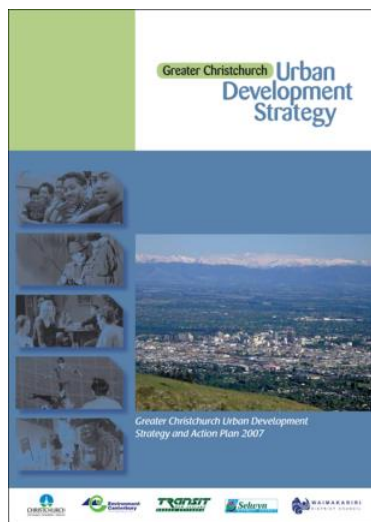


Figure 3.5 The Greater Christchurch Urban Development Strategy (2007)

Source: UDS Forum (2007)

The proposed new chapter Proposed Change 1 (PC1) would anchor the development pattern and sequence growth developed through the UDS. All Strategy partners worked on and endorsed PC1 prior to release. This was a major shift in how policy had been developed for the sub-region and included robust social and economic analyses on the costs of greenfield development. In late 2009, Environment Canterbury accepted the recommendations of independent commissioners who had heard public submissions. The decision was appealed by 50 parties to the Environment Court. Because of the number of appeals and issues raised, the hearing was divided into stages. This process was part way through when the earthquake sequence began in 2010.

The first action plan of the UDS was focused very much on Selwyn and Waimakariri Districts, particularly Selwyn District, which needed new subdivision to support the cost of developing and updating wastewater infrastructure. Economic policy work had also been completed between the 2007 and 2010 action plans. The review of the 2010 action plan was to be directed toward

¹² Regional Planning framework under the Resource Management Act 1991

Christchurch urban renewal and intensification. For this reason, the focus for the first ten years would remain on greenfield. Less work had been done to make changes to the District Plan. The earthquakes put a stop to PC1 and to any further implementation of the action plan.

3.4 The earthquake sequences

Aotearoa/New Zealand has a history of major geological events, even within the short timeframe of Māori and European settlement. Since Europeans arrived there have been a significant number of large earthquakes. Straddling two active geological plate boundaries (Glavovic et al., 2010), the country is dissected by many active fault lines associated with the subduction of the Pacific Plate under the Australian Plate. Strong earthquakes occurred in 1855 in Wellington and the Wairarapa, in Cheviot 1901, Murchison 1929, Napier 1931, Wairarapa 1942, Inangahua 1968 (Davey, 2011) along with the volcanic eruption of Tarawera in 1886. New Zealand also experiences significant meteorological events, drought, strong winds, flooding and coastal inundation leaving local communities to deal with associated landslips and landslides, and coastal erosion (ODESC, 2007). Prior to the 4 September 2010 earthquake, it had been relatively quiet for earthquakes in Canterbury. In the late 19th and early 20th centuries, however, large earthquakes had knocked the steeple from the Christ Church Cathedral in the centre of the city four times in 1881, 1888, 1901 and 1922 (Farrell, 2015).

3.4.1 September 2010

At 0435 on 4 September 2010, a large 7.1 M_w earthquake occurred on the previously unmapped Darfield fault 40 kilometres west of Christchurch, simultaneously rupturing up to seven other faults, including the Greendale fault (Kaiser et al., 2012). This earthquake caused no direct deaths but over 900 injuries, some of which were very serious. The ground movement damaged tens of thousands of homes. Unreinforced masonry buildings and some newer reinforced concrete structures were damaged mostly in Christchurch's eastern suburbs and in the Waimakariri District through shaking but also liquefaction and lateral spreading. On the 26th December 2010, a 4.9 M_w aftershock concerned geologists as this was centred on an unknown fault directly under the central city.

3.4.2 February 2011

At 12:51pm on the 22 February 2011, nearly six months after the first earthquake, a shallow M_w 6.3 earthquake hit to southeast of the centre of Christchurch at a depth of about 5 km. This earthquake released energy directly toward the city centre, producing peak ground acceleration

(PGA) of 2.2g, the highest ever recorded (GNS Science, 2011). Although the magnitude was less than September, the direction and PGA caused significant damage.

The earthquake had a dramatic impact on the people of Christchurch and Canterbury, with the loss of 185 lives. Around 6000 were injured and over 200 have been left with a permanent disability. Of those who died, 115 people were in the Canterbury Television (CTV) building, 18 in the Pyne Gould Corporation (PGC) building. Contrary to what had been expected, most fatalities occurred in relatively modern buildings (McDonagh, 2012). Another 36 died in the central city mostly crushed by falling masonry, 12 in suburban locations and an additional four people whose deaths were identified by the Chief Coroner as being directly associated with the earthquake (Source NZ Police website 15/03/2012).

The strong shaking caused liquefaction and lateral spreading over large parts of the city especially around the Avon/Ōtākaro and Heathcote/Ōpāwaho Rivers. Liquefaction was widespread across the central city into the north and south and most notably across most of the eastern suburbs. Over one million tonnes of liquefaction silt has been removed lowering land levels, leaving the city at greater risk of flooding. The Port Hills rose by up to 460mm at the edge of the Avon Heathcote Estuary/ Ihutai, causing rock fall and landslips and significant damage (CERA, 2014).

A State of National Emergency was declared from 22 February to 30 April 2011. At a peak, around 600 local and international USAR personnel helped with the response. More large earthquakes followed in 2011 on June 13 (5.3 Mw and 5.9 Mw) and six months later in December 23 (5.8 Mw, 5.4 Mw and 6.0 Mw) just as residents were settling back to a new normal. Again, these earthquakes caused widespread damage and disruption significantly affecting the psychosocial wellbeing of residents.

A distinct feature of these earthquakes that caused significant stress was these continued strong aftershocks occurring over a 16-month period well into the recovery cycle each bringing people back to the beginning of the cycle again (Gluckman, 2011). Between 4 September 2010 and June 2013, greater Christchurch experienced close to 13,000 earthquakes, 60 of which were above 4Mw (Geonet, 2013). These aftershocks were found to produce anxiety symptoms, depression and acute stress (Dorahy & Kannis-Dymand, 2011).

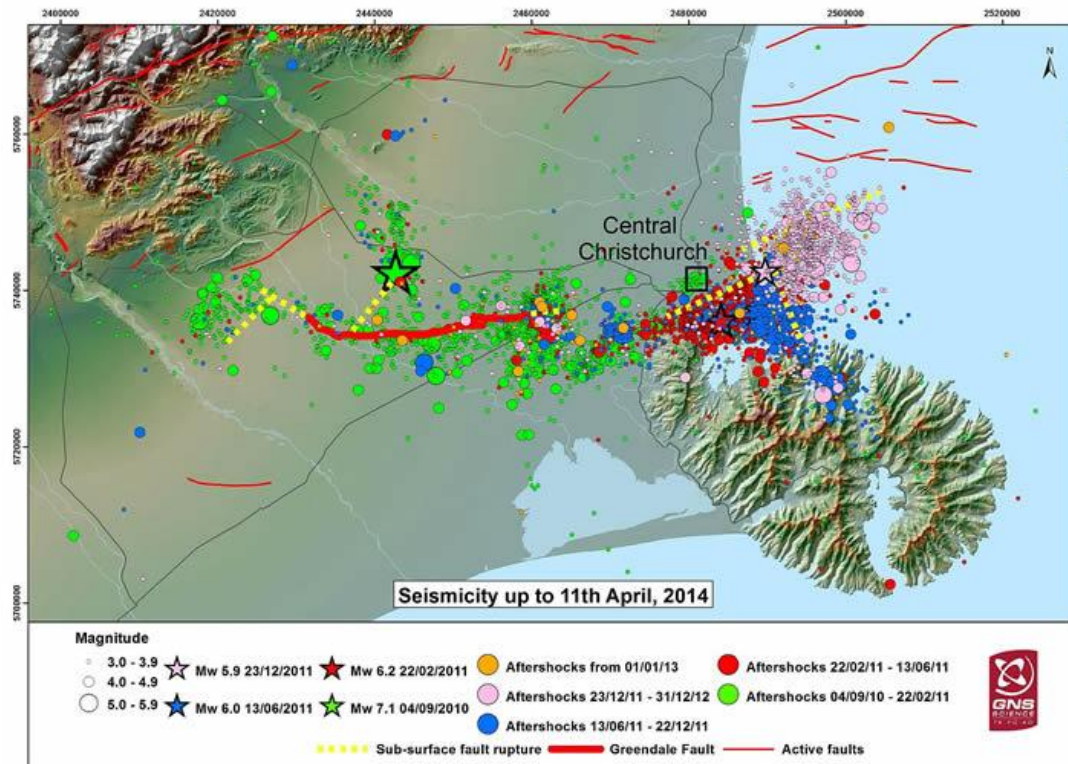


Figure 3.6: Earthquakes greater than 3 M_w across Canterbury and Christchurch between 4 September 2010 and April 2014

Source: GNS Science 2014 <https://geography.wr.sgs.gov/science/mhdp/RiskComm.html>.

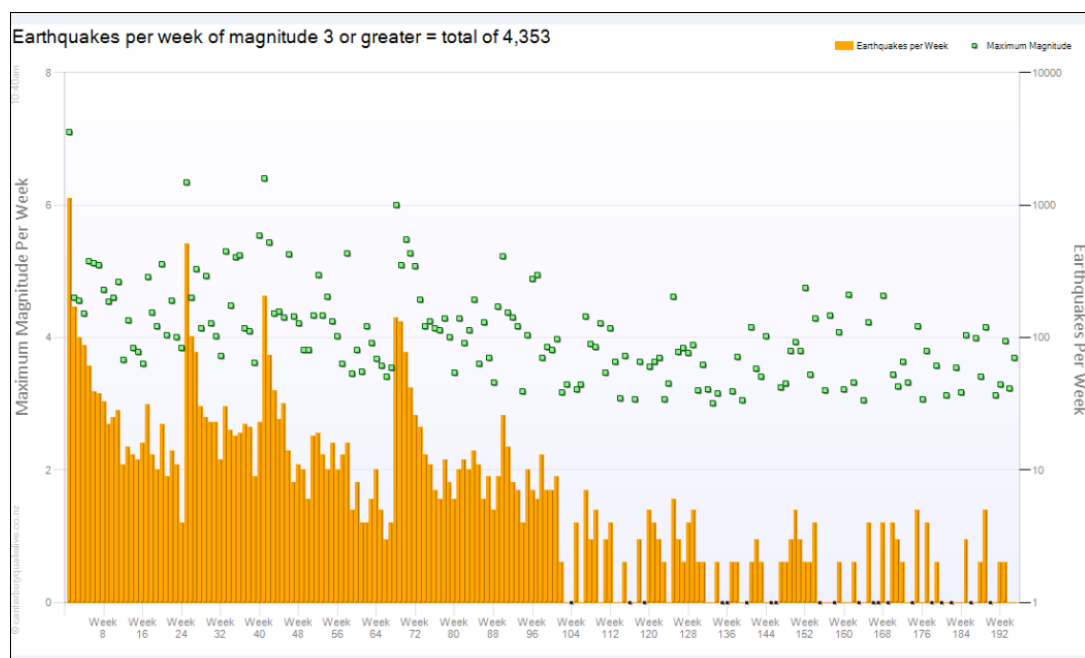


Figure 3.7: Number and magnitude of earthquakes per week from September 2010 to August 2013

Source: Quake Live <http://www.canterburyquakelive.co.nz/>

The total estimated damage is expected to reach \$NZ45 billion (Reserve Bank, 2016). The cost to reinstate infrastructure to pre-earthquake capacity was estimated to be \$37 billion, but with repair, rebuild and the opportunity to enhance wellbeing it is expected to cost another \$8 billion, bringing to a total of \$45 billion. Over 140,000 homeowners across Canterbury lodged claims with the Earthquake Commission (EQC) (EQC, 2016). New Zealand is unusual having a national insurance scheme for damage caused by all geophysical events. This was set up in 1945 following the 1942 Wairarapa earthquake and insures property, home and contents and unusually also land (Wood et al., 2010).

A central city a cordon was put in place around the central city to carry out the necessary demolition, this initially covered 92 hectares (Statistics NZ, 2013). As buildings were demolished and cleared the cordon was reduced. Over 1200, or about half of the central city buildings have been demolished (Falconer, 2015). With the central city was cordoned off, 6000 businesses and their 50,000 staff had to move their place of employment to suburban and industrial areas across the city. Over 90 percent of homes were damaged to some extent resulting in significant movement of people within and to outside of the city. Over 17,000 homes have had to be replaced: 7860 homes were red-zoned and removed because the land was deemed uninhabitable. Another 9100 homes were uninhabitable or required significant repair (MBIE, 2013). The central city residential population reduced by 36 percent between the two census periods from 7653 in 2006 to 4905 in 2013 (Stats NZ, 2015). Those residents remaining tend to be in the northern and eastern edge.

Table 3.2: Population change between 2006 and 2013

Source: Statistics NZ (2014)

	Residential population and percent change		
	2006	2013	% Change
Christchurch City	348,456	341,469	- 2.0
Selwyn District Council	33,642	44,595	+32.6
Waimakariri District Council	42,834	49,989	+ 16.7

The result was a significant housing shortage. People moving into short term rental accommodation paid by insurance inflamed the shortage, rents rose on average by 31 percent between September 2010 and February 2013 (Goodyear, 2014). Between 2010 and June 2011, the resident population decreased by nearly 9000 or 2.5 percent (Statistics NZ, 2011). School enrolments also dropped by about 3500, with another 4500 having moved schools (Law, 2011).

There has been shift in population to outside of Christchurch and into the Waimakariri and Selwyn Districts.

3.5 Post-Earthquake planning framework and decisions

On 6 September 2010, two days after the first earthquake, Minister Gerry Brownlie was appointed the Minister responsible for earthquake recovery. Two weeks later the Canterbury Earthquake Response and Recovery Act (2010) (CERR Act) came into effect and at the same time the Canterbury Earthquake Recovery Commission (CERC) was established. CERC was made up of the Mayors of Selwyn and Waimakariri Districts and Christchurch City, with four additional appointees, one of which came from the Environment Canterbury. It was intended to have an advisory function. Even with this formal structure in place, the Christchurch City Council under the direction of its CEO did not engage well within this structure, he did not appoint a recovery manager and did not initiate a recovery plan for Council activities (Kipp, 2016). The CEO was very clear to staff, especially those who presented to him the opportunity to use the council's strategic documents, that the direction was to remain business as usual. Although at the time, staff worked in conjunction with the Canterbury District Health Board among others to develop recovery support documents, an example of which is the Integrated Recovery Guide (2011).

Following the 22 February earthquakes, CERC was replaced with the Canterbury Earthquake Recovery Authority (CERA) under new and more draconian legislation, the Canterbury Earthquake Recovery Act (2011). Again, the Minister for Canterbury Earthquake Recovery, Gerry Brownlie was provided with broad and special powers to enable and coordinate the recovery and rebuild (CERA, 2012). The new Act was justified because the scale of damage would require significant input from central government. The final approved structure of CERA had a look of a unitary planning authority. The focus was on action and more able to be captured by vested interests (Kipp, 2016). Internationally structures like CERA are less in favour as they are seen as a fundamentally flawed model (Kipp, 2016). Added to this, the poor relationship between Minister Brownlie and the Mayor of Christchurch, the now Sir Bob Parker did not help (pers comm¹³). Parker had led the governance development process of the UDS signed off by Labour Prime Minister, Helen Clark in 2006.

In October 2011, the Minister withdrew Proposed Change 1 (PC1) of the Regional Policy Statement (RPS) and using the CER Act, placed two new chapters directly into the RPS.

¹³ This was confirmed by three informal and three key informant interviewees

Supposedly this was to respond quickly to the effects of the earthquake and provide homes for those who had been red zoned. One placed noise contours around the airport, while the other set urban limits for greater Christchurch adding designated greenfield development to the north and south as outlined by the UDS. The change could not be challenged except through a point of law. Landowners who had challenged the land allocation of PC1 prior to the earthquakes, appealed to the High Court, stating the Minister had over used his powers, because PC1 was not entirely earthquake related. The High Court agreed. The Minister and partners in response challenged this High Court decision to the Court of Appeal, which also agreed the Minister had over used his powers. The Court of Appeal directed that planning should be achieved through a recovery strategy.

Christchurch City Council's initiated a very successfully consultation process called 'Share an Idea' in May 2011. This provided the people of greater Christchurch with an opportunity to tell the council their ideas about how the central city could be redeveloped. The resulting draft Central City Plan was provided to the Minister on the agreed date in mid-2011. This Plan was subsumed into the Central City Development Unit of CERA with a new Central City Recovery Plan not emerging until July 2012. This time, virtually no opportunity was provided for the community to participate. The importance and lack of community participation in the recovery of the city has been discussed at length within the literature (Bennett et al., 2014).

The first policy document prepared by CERA, the *Recovery Strategy for Greater Christchurch* was released in 2012. The Recovery Strategy was to be the overarching statutory document to direct all recovery plans and programmes, it did not reference the UDS. Planning for Christchurch was then divided between the Central City Recovery Plan and the Recovery Strategy for everything outside the central city, including the Selwyn and Waimakariri Districts.

In June 2011, the Prime Minister John Key and Minister Brownlie announced that land in greater Christchurch¹⁴ would be progressively mapped into zones. Land zoned red was deemed too badly damaged and could be of further risk to earthquakes and flooding. The result was 7860 homes needed to be replaced (see Figure 3.9). The red zoned homes sustained some of the worst damage and caused stress around where to move, affordability and dealing with insurance (Farrell, 2015).

Then in early 2012, the National Government announced a programme of local government reforms, one of which made amendments to the LGA 2002 through the LGA Amendments Act (2012). These amendments made substantial changes to the purpose of the LGA, introduced fiscal

¹⁴ Greater Christchurch in this case encompasses all of Selwyn and Waimakariri Districts and Christchurch City.

benchmarks and gave substantive powers to the Minister for Local Government. Significantly the changes removed local government responsibilities for social, cultural, environmental and economic well-being. These concepts have been replaced with local responsibility to provide good quality infrastructure services and performance. Local Government New Zealand made a strong submission emphasising the importance of local democracy and the necessity for local strategic planning (LGNZ, 2012). Then in November 2012, the Minister directed the Environment Canterbury to prepare the Land Use Recovery Plan (LURP).

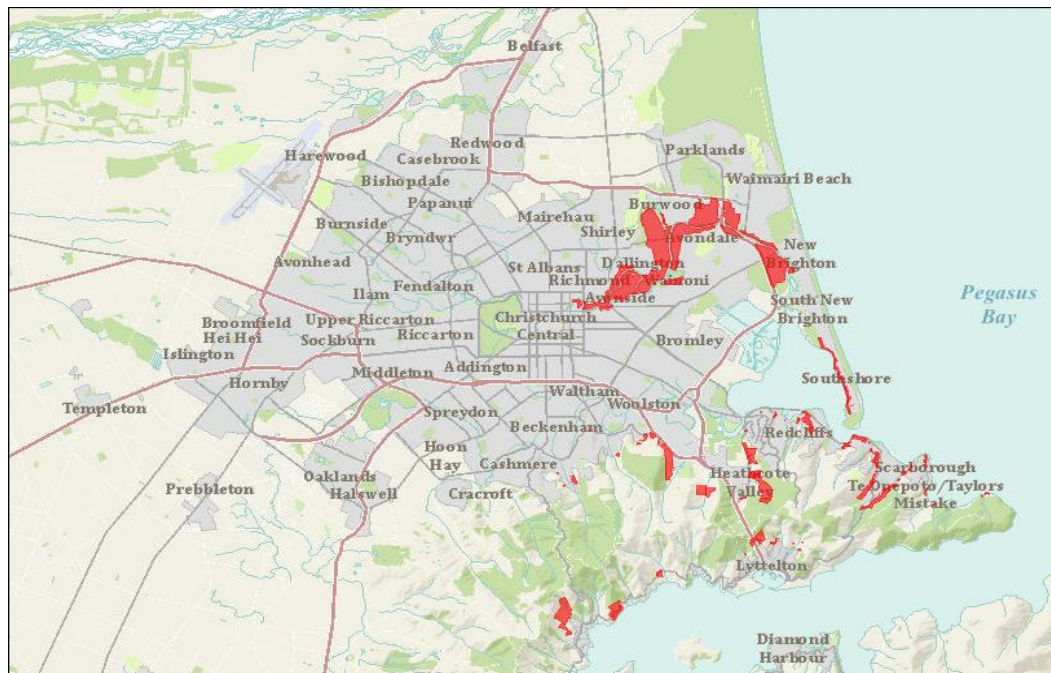


Figure 3.8: Residential red-zone areas.

Source: <http://www.lin.govt.nz/crown-property/types-crown-property/christchurch-residential-red-zone>

3.5.1 The Land Use Recovery Plan

The LURP was prepared under severe time constraints with most consultation focused toward specific stakeholders, especially developers. There was limited community input. Experienced staff included an Integrated Assessment be carried out early in the development of the LURP to assess health and wellbeing, as well as social, cultural, economic and environmental outcomes of the development pattern. Significant amendments were made to the drafting of the LURP as a result. The Plan was submitted to the Minister in July 2013, where it sat until gazetted in December 2013. Salmon (2015) describes a very hands-on Minister, with a strong ideological view of urban development to be within new subdivisions. The National Party focus on greenfield urban development has resulted in a lost opportunity for the regeneration of Christchurch.

The bulk of the dispersed pattern of development was decided prior to the release of the LURP. The LURP replaced PC1 over a reduced time of 10 -15 years with up to 30,600 greenfield sections expected to come onto the market by 2016 (Young, 2013). This significantly exceeded the UDS intended release (CERA, 2013; UDS Forum, 2007). The new greenfield areas were formally agreed to by the UDS partners, but it was clear this was driven by CERA and the changes were to have immediate effect. The Minister took advantage of the need to find additional housing units for the 7,400 red zoned households by broadening the scope of the decision. In total, 80,715 new household units became available mostly in new subdivision across the three councils (Salmon, 2015). Little was directed to intensification or greyfield¹⁵ within the existing city boundary and with infrastructure (Newton et al., 2012). Salmon (2015) discusses that the population projections to 2041 were used as the reason, but there may have been an underlying assumption that if more land was available the land price may reduce. There is little evidence this happened. Rather than concentrating new and rejuvenating development in existing urban areas, the LURP has extended the trend for urban sprawl. The LURP was weak on infill development although intensification was provided for about 14,000 lots in the central city and 19,500 in existing suburbs. This new development trajectory is perhaps worse than what would have occurred under pre-earthquake BAU.

3.6 Chapter summary

This chapter outlined the background of the development of Christchurch, the history and the planning framework under which the city developed. It summarises the pre-earthquake planning that was in train prior to the earthquake sequence, one that may have taken a very different course had the earthquakes not occurred. Prior to the earthquakes planning for the city was focused on more sustainable land use pattern.

The subsequent land use plan is based on a 20th century model of continued car dependent transport. This study is not focussed on this peripheral greenfield development, the intent was to provide an overview of the direction of urban development in Christchurch as background to discussion in the following chapters. The next chapter outlines the research methodology and the specific methods used.

¹⁵ Rejuvenating and revitalising housing within existing suburban areas.

Chapter 4: Research methods

4.1 Introduction

Chapter four outlines the research approach and describes the methods used. The conceptual framework is that following a disaster, communities because of their social connections can be self-reliant, self-organise, be adaptive and gain access to needed resources close by. There is a relationship between social connectedness and networks, the quality of place, access to social infrastructure and natural resources that enhances the ability of a community to self-organise when needed. The opportunity provided by the earthquakes is unique; most people would be unable to anticipate how they or those close to them would respond in advance to such circumstances. Qualitative research offers the flexibility needed to work through the array of issues that can be explored. Investigations into disasters have helped to advance the understanding of what gives rise to community action and volunteering to meet community needs (Stallings & Quarantelli, 1985; Phillips, 2014), but more reference on the role of place is needed.

This chapter first explains my background, then the selection of suburbs studied, the methods used and the way in which the data were analysed. I use the term data to describe the accounts gathered from the qualitative interviews with key informants and participants. Initially, I had intended to use a greater mix of methods, including diaries to map participants' movements and use of neighbourhood as well as focus group interviews. This changed when the interviews revealed much about how participants used their neighbourhoods. A short quantitative questionnaire was added to supplement the semi-structured interviews.

4.2 Researcher's background

This section provides context to explain how I arrived at this subject and this thesis. It was not pre-planned but part of the evolution of my working life. Like many New Zealanders my age, I lived outside the country for a long time. I arrived in Christchurch in late 2003 from Sydney with my English husband and Australian children, as we wished for our children to be near family and to belong to my landscape. After 24 years, the New Zealand I returned to was markedly different to the one I had known, it was in effect like moving to a new country, one I had to relearn. For my 14 years living in Australia, I worked for the New South Wales State public service in strategic policy roles in marine and fresh water management, public health and coastal urban planning.

From 2005 to the time of the 22 February 2011 earthquake, I was a strategic adviser for the Christchurch City Council and project leader for the partnership programme of the UDS. Early in

the development of the UDS, I was involved in the broad scale inquiry by design process. As this was being developed and the technical teams arranged (e.g. transport, economic, green space), it became very clear in this design led approach the social or people element was missing. No one was directly advocating for the social aspects of city living; for those who would be living there. With colleagues from council and public health, we arranged for 20+ groups representing the not-for-profit community organisations, social policy and housing, Māori, Pasifika people, migrant communities, as well as youth and elderly people to participate in this design workshop. Participants from these groups infiltrated into the UDS technical groups; sitting equally alongside the technical expertise. This was a successful manoeuvre and may have subtly helped to shift the focus of the Strategy away from transport planning and closer to people.

I was here in Christchurch for the earthquakes sequence that started on 4 September 2010, the devastating 22 February 2011 aftershock and following large aftershocks. I have carried out my research as a resident of a broken city. I was on the ground (albeit shaky) as part of the response and recovery following the February earthquake. Like those I have interviewed, I too experienced the physical, emotional and social stresses as a resident of greater Christchurch.

On 3 September 2010, the day before the Darfield earthquake, council staff (including me) moved into the newly refurbished council building. The following Monday I was due to start a three-month secondment to Community and Public Health of the Canterbury District Health Board to help prepare a city health profile; a key action of the revised UDS action plan. Instead, I became involved in preparing an Integrated Recovery Guide (2011). The guide was devised to assist with community recovery by offering questions that would contribute to community well-being, to provide the basis for developing and evaluating planning proposals and projects. In effect, it was an attempt to ensure that the principles of health and sustainability were integrated into recovery activities. I returned to the council from my secondment 10 days before the 22 February 2011 earthquake.

The February 2011 earthquake changed so much. Council staff were immediately deployed to the Emergency Operations Centres. My role was to facilitate entry passes into the central city cordon managed by the Aotearoa/New Zealand Army. This was one of the most unsettling times of my life. I was dealing with my own family's needs and loss, and then to encounter people who had potentially lost so much more: family, friends, colleagues, homes, businesses and clients. This tested me and has been part of a step in recognising the greater need to emphasise the social in strategic planning, and how we can gain knowledge and understanding through such events.

4.2.1 Sensitivity to approach

Because I was affected to some degree, like everyone within greater Christchurch, I could interact with participants with some understanding of what they had been through. As an insider, (Phillips et al., 2008) I could acknowledge the difficulties for many interviewed, especially where there had been loss of life, difficult insurance issues, but also dealing with loss of landmarks and routine of city living. Or even the noticeable effect of stress and cortisol affecting memory, or what was often called quake brain. With laughter one key informant said to me “I still say can you get the milk out of the oven.”

Like all researchers, I am gendered and culturally situated and this needs to be openly acknowledged (Hoggart et al., 2002). I was aware of the social context, particularly for me as a middle aged, middle class, Pākehā woman interviewing others of varying vulnerability and cultural contexts. I tried to be attentive to what was said and to do less talking and more listening. I also sought to understand that different realities can also exist, that the lived experience of the earthquakes will differ depending on individual and social factors, experience and personal circumstances (Phillips, 2014). Criticism has been directed toward interviews where the focus is on speech rather than the social interaction (Andrews, Squire & Tamboukou, 2013). I attempted to maintain a conversational approach for all interviews to work to gather data.

An individual’s narrative represents a combination of their internal personal state and their external social circumstances. As the audience, their story was potentially shaped by me as the listener and what they perceived I might wish to hear (Andrews et al., 2013). Their narrative may also take shape through the retelling over time – the story telling of where they were when the earthquake occurred. The conversational sequence in how people talk is also relevant as the telling of small stories or their individual story can help to gain an understanding of the big story (Bamberg, 2006). The earthquakes were the big story but the everyday negotiation through that time took form as a collection of smaller individual stories, a culturally shared experience that helped to unfold the post-earthquake events. This research was less interested in biography but what is similar or different across suburbs of the city.

4.3 Research setting

The selection of suburbs presented several challenges given the large number within a frame of differing contexts and the breadth of damage across the city suburbs. I started gathering data and information on suburbs early in my research in 2014. Data sources for the local level came from

council articles and website, local newsletters, government and CERA policy documents and reports, the local newspaper *The Press* and the grey literature.

Several factors motivated the choice of suburbs for study. Post-earthquake researchers mostly initiated studies of Christchurch suburbs that are clearly defined (see Mamula-Seadon et al., 2010; Paton, 2012; Thornley et al., 2013; Yanicki, 2013). These were either very geographically well-defined such as Southshore, Sumner or Lyttelton (see Figure 3.2 for suburb positions) or had very specific socio-demographic factors such as Aranui. Other suburbs had experienced similar damage through lateral spreading, liquefaction or rockfall but because their geographic boundaries are not easily identifiable they had not been used as study sites. Research has been able to show that geographically well-defined neighbourhoods recover quicker from a disaster and more successfully than those less distinct (Nakagawa & Shaw, 2004; Chamlee Wright & Storr, 2009). A review of the literature and reports completed in the intervening three years also meant some suburbs could be excluded to avoid resident fatigue.

Suburbs were also excluded based on the zone categorisation of land. The 2006 Census and first release packages from the 2013 Census also made it possible to identify the most affected suburbs. Two thirds of homes within Burwood and almost half within Dallington were red zoned along with large numbers in Bexley, Avondale and Avonside. In addition, these and many others on the east side had significant disruption of services: sewerage, stormwater and water infrastructure and many roads are still badly damaged. I targeted suburbs where residents largely have been able to remain in their homes. The study did not aim to interview the most stressed people, who may not have been able to provide a balanced or coherent view of where they live because of insurance or rebuilding issues.

I also worked studiously through the community profiles provided by the council.¹⁶ These suburb descriptions were developed in 2006 and then reviewed and updated post-earthquake between 2011 and 2012. The profiles map pre- and post-earthquake issues and loosely map social capital in aggregated Census Area Units. A problem arises as some areas are aggregated up to contain large numbers of households while others remained as single areas with fewer households. The profiles measured core demographics for each area, including counts of community groups, sporting clubs, residents' associations and the facilities available. Although the methodology was subjective, it improved with added data and information, and importantly provide a useful comparison. Between February and May 2011, once the emergency work had been completed,

¹⁶ <https://www.ccc.govt.nz/culture-and-community/statistics-and-facts/community-profiles>

council staff moved into recovery, based in recovery and information centres across the city. Informal early interviews with staff involved in this process described how teams would meet fortnightly to prepare reports after reconnaissance and talking with people on the streets. They attempted to observe what happened and to be transparent through the process, using the Integrated Recovery Guide (2011) as a way of framing questions. The 2012 profile review tried to identify how areas had changed following the earthquakes, they were of the moment, combining both data and observation and any additional information that had been gathered.

The final selection of suburbs attempted to be representative of different living environments: inner city zoned medium density (a mix of mid and high decile) and suburban (low decile and mid decile). The deprivation decile score reflects a continuum of least deprivation (1) to most deprivation (10) (Atkinson, Salmond & Crampton, 2014). NZDep2013 an update of previous indexes of New Zealand socio-economic deprivation combined nine variables to reflect eight dimensions of deprivation. These include access to communication, income, employment qualifications, home ownership, support within family, living space and access to a motorised vehicle. Although there are difficulties in comparing between and among census components, they were used in this process to provide a broad view of each suburb.

The four case study suburbs selected were Hoon Hay, Merivale, Opawa and Phillipstown (see Tables 4.1 and 4.2 below). These suburbs are made up of neighbourhoods with residents from different socio-economic circumstances, diverse housing types, street widths and traffic levels, walkability and access to shops, schools and community facilities. The intention was not to make a comparison among or between the different suburbs, but to understand how the different features of each suburb contribute to resilient communities.

Table 4.1: Characteristics of the four case study suburbs¹⁷

Feature	Hoon Hay	Merivale	Opawa	Phillipstown
Population ¹	2793	3012	3066	3786
Pop change 2006-2013 (CCC)	↑30	↓303	↓297	↑294
Decile 2006 , 2013	4, 4	5, 4	5, 4	10, 9
Density p-ha	10-20	20-30	10-20	20-30
Zoning ²	L1	L2/L3	L1/2	L3
Social Cohesion (SHORE) ³	3.935 (11)	3.786 (14)	3.571 (4)	3.519 (11)
Traffic	Local	Local	Local	Arterial
Connectedness ⁴	Low	Low	Medium	Low
Volunteering ⁴	High	High	Medium	Low
Participation ⁴	Medium	High	Medium	Medium
Neighbourhood support ⁴	Low	Low	Med - Low	Medium
Primary schools	3	1 + 3 private	3	0
Library	0	0	1 unavailable	0
Sport Groups	Yes	Yes	Yes	Yes
Faith Groups	4	4	3	0
Parks and spaces	Park	Small	Parks	Very small
Access to natural environs	Edge hills / river	Edge Hagley	River	No

¹ StatsNZ (2013)

² L1 low density development on minimum of 450 sqm land, L2 low to medium density on minimum of 330 sqm, L3 medium density townhouse type development on minimum of 300 sqm.

³ SHORE Social and Health Outcomes Research and Evaluation - social cohesion score.

⁴ Reference to Community Profiles - Christchurch City Council.

Table 4.2: Deprivation ratings for the four case study suburbs

Suburb – based on CAU	Context & Location	Deprivation decile score 2006 census	Deprivation decile score 2013 census
Hoon Hay	Suburban	4	4
Merivale	Inner city	5	4
Opawa	Suburban	5	4
Phillipstown	Inner city	10	9

¹⁷ This table was completed for 23 suburbs but only the four used are shown here.

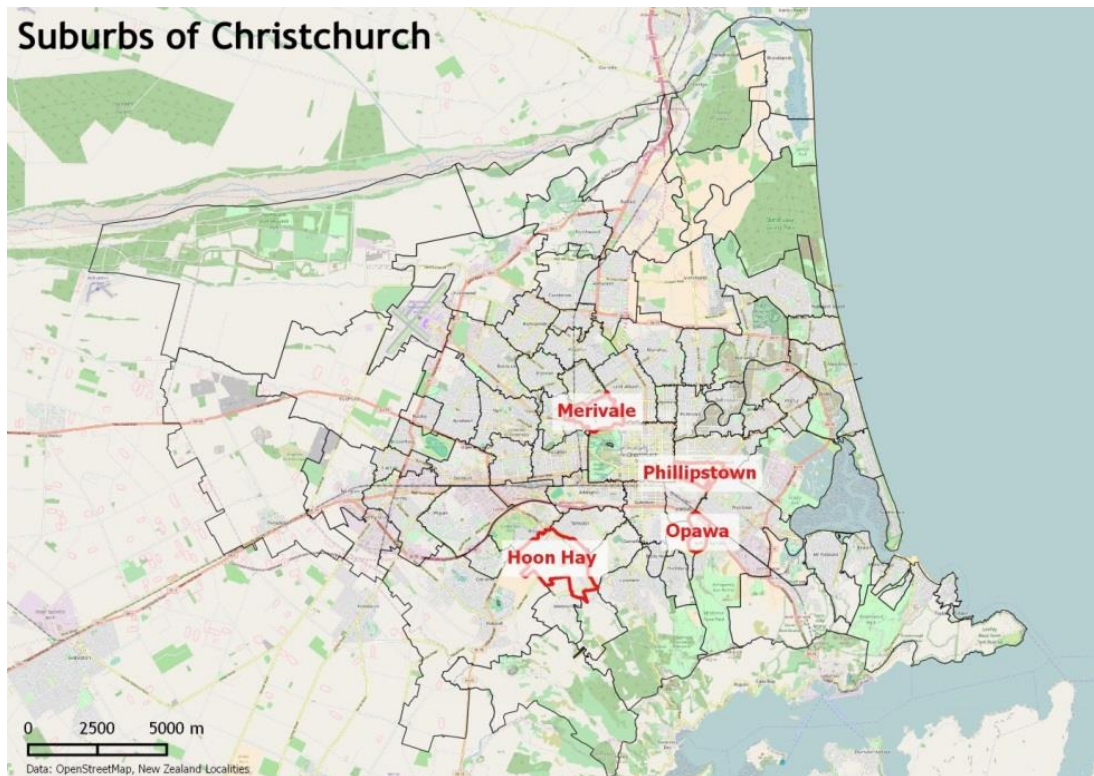


Figure 4.1: Case study suburbs in the context of Christchurch

These following suburb descriptions have been collated using the community profiles¹⁸ provided by the council in 2012 and through interviews with council staff, analyses from Google maps and walking in each suburb. Suburb maps are provided to give a generalised overview of the suburb structure rather than pinpointing to specific locations or street names.

4.3.1 Case study suburbs

Hoon Hay

Hoon Hay is in the south west edge of the established urban area of Christchurch comprising mostly residential flat land bordering the Port Hills to the south, Lincoln Rd to the north. It is a large spread out suburb intersected by two busy roads effectively dividing Hoon Hay north/south. Hoon Hay was primarily developed through to the 1960s at a time of significant suburban expansion to the west and north. Most residential buildings comprise detached family houses in sections of between 500 and 750 sqm. The suburb is designed around car use. In the west of the suburb it is easy to become disorientated where streets end at the edge of the city. It is an example of low density suburban neighbourhood with a significant number of cul de sac streets or small

¹⁸ <https://www.ccc.govt.nz/culture-and-community/statistics-and-facts/community-profiles/>

streets that end at stream or urban edge boundaries. It has kept most of its suburban character not having changed since the suburb was developed. Council staff described a stable suburb with many residents having lived there for decades.

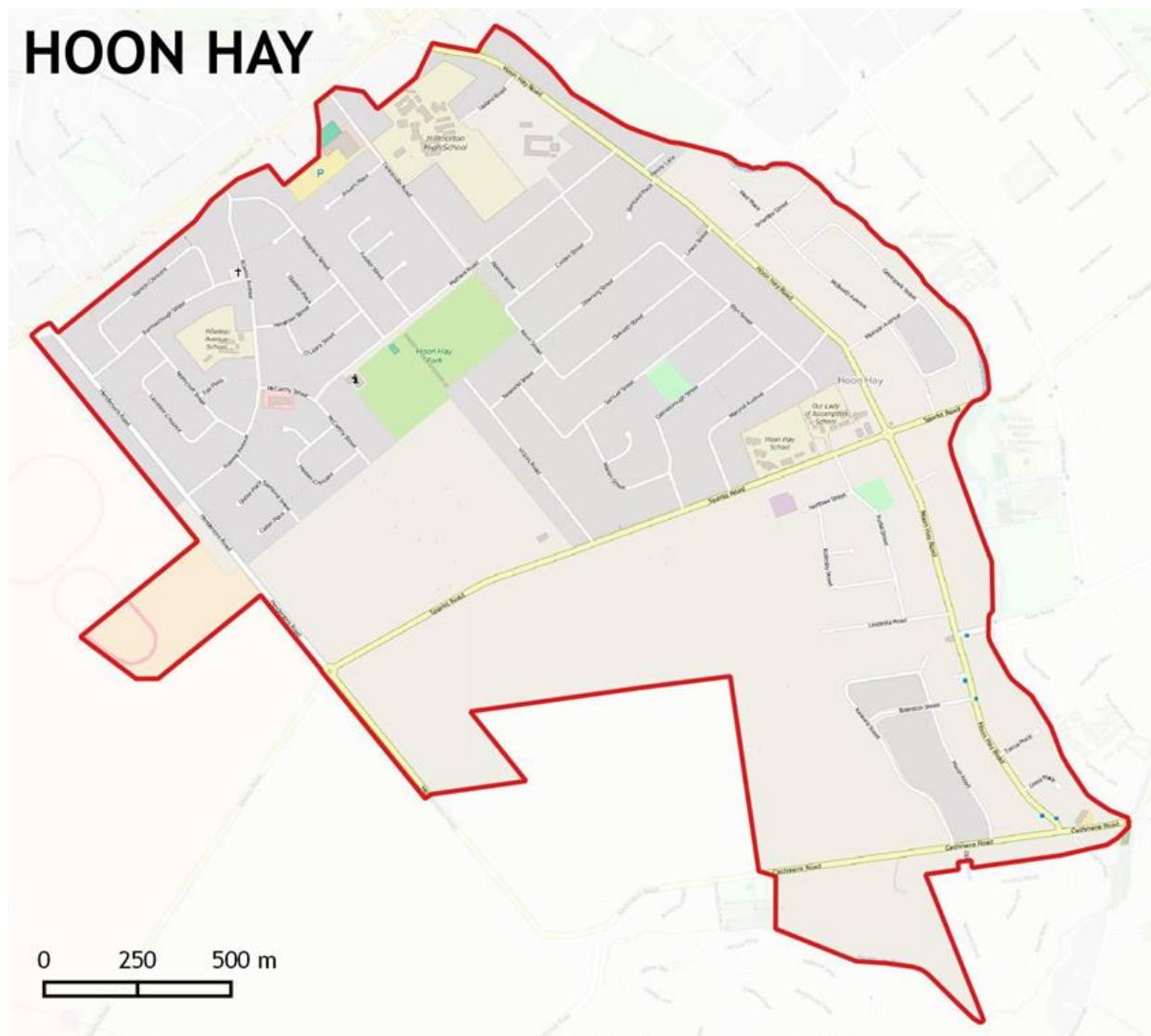


Figure 4.2: Suburb of Hoon Hay

Hoon Hay has a population of 2862 (StatsNZ, 2013) of predominantly European origin 91.3 percent compared to the city average (84%) and a comparatively lower Asian population (5.2%) compared to the city (9.4%). The Māori population is also lower at 6.9 percent (8.5%) many of who are clustered around Rowley Avenue in the northwest corner of the suburb with Pasifika people, and migrant families. Fewer people living in Hoon Hay were born overseas (16.6% compared to a city average of 22.2%). Housing New Zealand has many homes concentrated within the Rowley Avenue area. The council also has over 200 units within eight social housing

clusters in Hoon Hay. Overall there are 1,107 occupied dwellings within Hoon Hay (StatsNZ, 2013).

Hoon Hay has a slightly higher proportion of children in kindergarten and primary school compared to other suburbs (StatsNZ, 2013). Residents over 65 make up 15 percent, while the greater proportion of the population is between 25 and 40 years. The median age for residents is 37.7 years with 20.4 percent are under 15 years compared to 17.8 percent for the rest of the city. While 34 percent over 15 have never married, 47.3 percent are married, 18.7 percent are separated divorced or widowed, 28.9 percent who have never married live with a partner. Two thirds of residents travelled to work by car on census day, 13.8 percent by company vehicle and 9.5 percent by cycle. For those over 15 years old, the median income is slightly higher than for Christchurch city \$31,900 compared to \$29,800 (StatsNZ, 2013). The unemployment rate for Hoon Hay is four percent compared to 5.1 for the rest of the city.

Hoon Hay has three primary schools and Hillmorton High School, although many of the teenagers within southern Hoon Hay are zoned for and so may attend Cashmere High School located near the suburban boundary in Somerfield. Spreydon School on the other side of Lincoln Rd is proposed to move into the school grounds of Manning Intermediate beside Hillmorton High School, closed by the Ministry of Education at the end of the school year in 2013. Rowley Avenue School has a decile rating of 1,¹⁹ the most deprived. Hoon Hay residents have a lower educational attainment rate than nearby suburbs with 22 percent having gained no formal qualification (StatsNZ, 2013).

Three small shopping centres are located within Hoon Hay. One at the northern end, Hillmorton shopping centre has a pharmacy, veterinarian practice, real estate agent, and small food and alcohol outlets. In the centre of the suburb, a small group of shops, a dentist and pharmacy are located opposite a service station. The third centre is in the far south west corner of the suburb and similarly has small food outlets a dairy, fish and chip shop and a café in an area called Cracraft. Barrington Mall in Spreydon, the identified key activity centre within the regional planning framework, serves as the main shopping centre with a supermarket and large multipurpose shopping as well as smaller everyday shops. Barrington also serves as a hub for public transport.

¹⁹ The educational decile rating is opposite to the deprivation scale and indicates the extent to which the school draws students and their socioeconomic status of the home in which they live. Decile 1 schools are the 10 percent with the highest proportion of children from low socioeconomic communities, while decile 10 is the lowest proportion.

Hoon Hay Park lies in the centre of the suburb and is mostly grass for sporting activities. Domain Terrace with stream and natural spaces lies to northern edge and there are two smaller parks. Hoon Hay also has access to substantial natural areas in Hillmorton and the Canterbury Agricultural Park, tree dominated walks through Hillmorton Hospital in the north and Heathcote/Ōpāwaho River and Port Hill walks in the south. The City Council operated Pioneer Recreation Centre provides swimming, gym and sports facilities is just outside the suburb boundary, as is Spreydon library at Barrington. This library was to be closed with the opening of South Library in Beckenham, but community objections ensured it remained open and is a busy meeting place.

From a civil defence preparedness perspective Hoon Hay is rated low by the council²⁰ because of the lack of formal neighbourhood groups, although there are many sports teams.

Merivale

Merivale lies two kilometres to the northwest of the central city. As one of the early settlements of Christchurch, Merivale has many older style narrow streets and laneways. The suburb also has examples of some of the early estates with large homes and old and well established gardens and street trees. Following changes to the Christchurch City Plan zoning²¹ in the 1990s that allowed L2 and L3 developments, Merivale has become a diverse mix of housing ranging from these old villas to new architecturally designed homes sitting alongside less well designed medium density developments. The western side of Merivale could be described as suburban with large homes on large sections that range from 500 up to over 1000 sqm.

Merivale has a population of 2706, most of who are of European origin at 88.7 percent compared to 84 percent for Christchurch. Māori make up 4.3 percent (8.5%), Pasifika peoples less than one percent and Asian 7.6 percent, (9.4%). The mean average age of a Merivale resident is 43 and households have a high rate of no children (47%), 16.7 percent are one parent families and 36.5 percent are couples with children (StatsNZ, 2013). A quarter of all residents were born overseas. Incomes in Merivale tend to be higher than average for Christchurch, although there is a growing trend to lower incomes due younger residents renting the growing medium density housing where 26 percent live in one-person households. In Merivale, 41.6 percent over 15 year olds have an annual income greater than \$50,000 compared to 27.1 percent for the rest of the city. Family trusts

²⁰ <https://www.ccc.govt.nz/culture-and-community/statistics-and-facts/community-profiles/>

²¹ <https://cityplan.ccc.govt.nz/Images/CCOPIImages/City%20Plan%20Planning%20Maps/Planning%20Maps%20pdf/32AandB.pdf>

account for 20 percent of home ownership, 37 percent are directly owned, and the remaining 43 percent are rented (StatsNZ, 2013).

Elmwood Primary is a public primary school in the north of the suburb with a school decile rating of 10. Merivale contains two private girls' schools for all ages and a private coeducational primary taking in students from across the city, as well as boarders from country areas. A second primary school Ferndale is a special school funded by the Ministry to provide specialist education for children for all educational years.

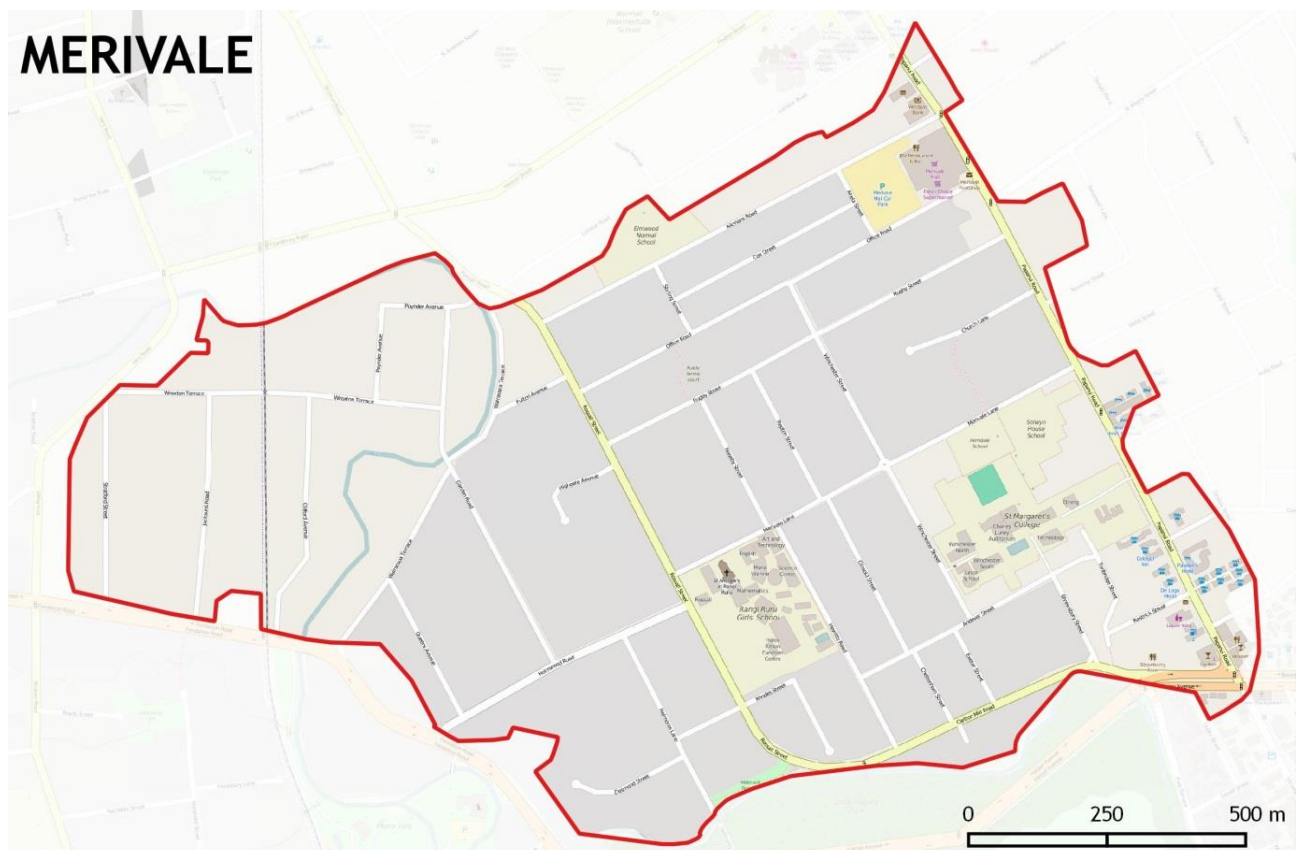


Figure 4.3: Suburb of Merivale

Merivale has a shopping centre in the north-east corner of the suburb, with many well-established specialist and destination shops for clothing, books, a supermarket and entertainment places. Merivale is also close to the re-establishing entertainment hub on Victoria Street, which connects Merivale to the central city. Victoria Street was one of the first parts of the central city to rebuild as was outside the Central City Development Plan.

Merivale has good access to the natural environment due to its proximity to Hagley Park and the Botanical Gardens, as well as smaller parks although these tend to be man-made features of open grass and trees and or gardens. Merivale residents also have access to the Mona Vale homestead and established gardens. Merivale pocket parks are very garden orientated where old homes have been removed leaving garden features, for example, a tennis court and more intimate sitting spaces.

There are few neighbourhood support groups as found by the City Council measures of resilience mapping and few community support organisations. From a civil defence preparedness stand point Merivale rates relatively low because of this lack of formal neighbourhood groups.

Opawa

The Opawa community profile provided by the City Council is incorporated into a joint profile with St Martins and Beckenham. All three suburbs are delineated by the bows of the Heathcote/Ōpāwaho River. Opawa (a contraction of Ōpāwaho) lies about five kilometres south east of the central city on flat land that is bounded between the river bow, the river terraces against the Port Hills, flat land towards the central city and State Highway 76 leading to the Lyttelton Port. Opawa as one of the original settlements of the Christchurch region has a village centre and streets of varying width. Some older and original streets are narrow and cul de sacs end near the river or park boundaries. Opawa centre contains a small number of service shops including medical and pharmacy services, a dairy, hairdresser, café, bike shop and until recently a butcher's shop. Opawa churches were lost or suffered substantial damage in the earthquakes. Similarly, the Opawa Public Library was damaged and is now co-located within the Opawa Children's library on a smaller site. Many within Opawa are also likely to use South Library in Beckenham, which is relatively close. Opawa also hosts a farmer's market on Sunday.

Opawa has a resident population 3066 most of who are of European origin 91.5 percent, eight percent higher than for the city (StatsNZ, 2013), 20 percent are born overseas. Māori make up 6.8 percent (city 8.5%) and people of Pacific and Asian origin are also comparatively low at 1.8 percent and 2.8 percent, compared to the city average of 3.1 percent and 9.4 percent. The largest population is middle aged, mostly between 40 and 60 years old and of European origin. The median age for Opawa is older than for Christchurch: 43.9 years compared to 38.9, and 18.4 percent are over 65, 3 percent more than the rest of the city (StatsNZ, 2013). A third has never married, 46.7 percent are married and another 20.7 percent are divorced, separated or widowed. There are fewer couples in Opawa who have never married and who live together. More residents

in Opawa have access to three or more cars and the car was the most common means to get to work, although 12.4 percent also travelled by bike (StatsNZ, 2013).

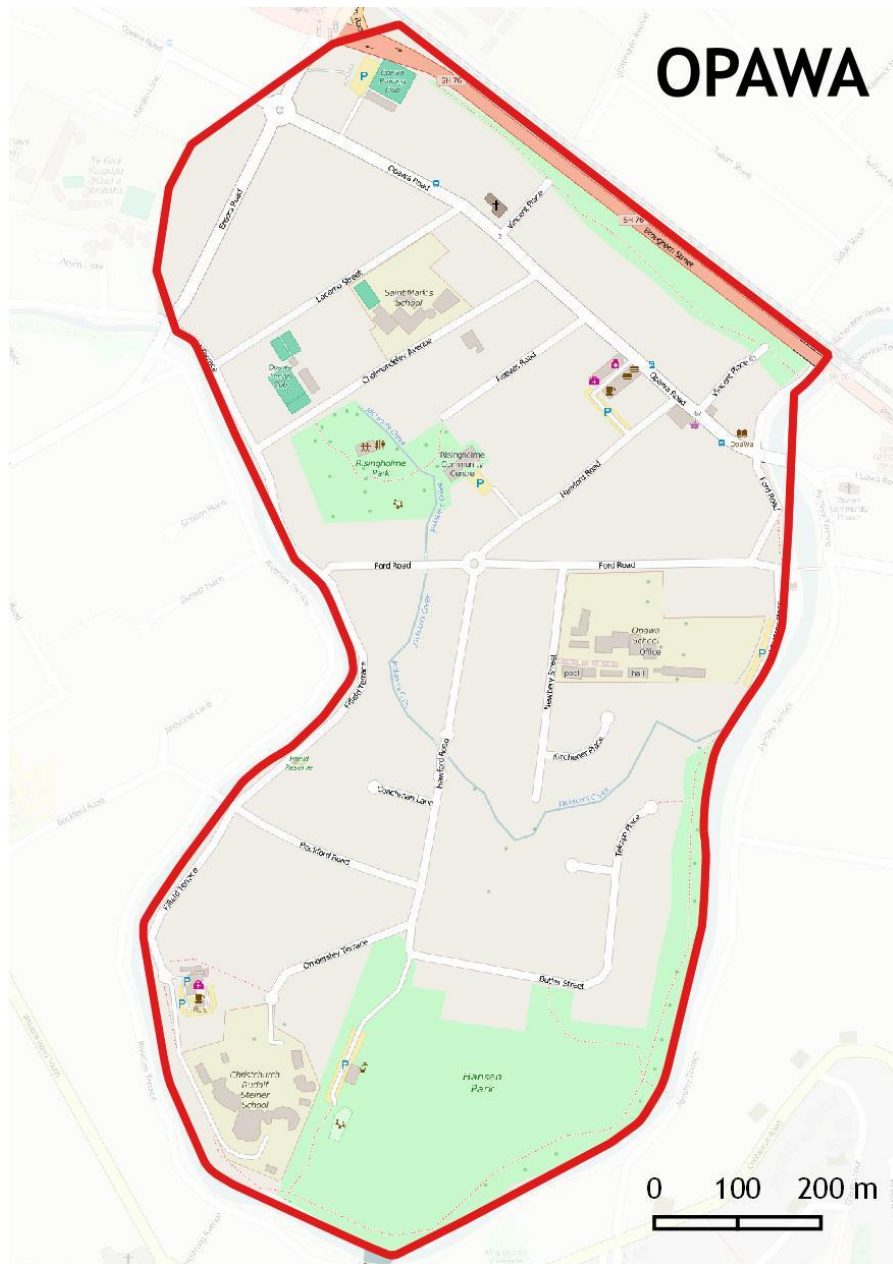


Figure 4.4: Suburb of Opawa

The demographic profile of Opawa is of a middle-income area but with pockets of deprivation and elderly people, some in social housing. After the February earthquake many homes in the area near the Port Hills were damaged. Other homes were damaged because of lateral spreading from the collapse of the bank along the river. Until November 2012, some properties had been zoned orange because of this land damage, but have since been zoned green and are still habitable. The

resident population dropped slightly between the 2006 and 2013 census (StatsNZ, 2013) most likely due to this damage and loss of homes.

About 60 percent own their own homes and about 60 percent have a child at home in single or dual parent households. The number of unoccupied houses has increased slightly due to issues with insurance. Opawa has a higher average income of over \$70,000; with a similar distribution for qualifications 18 percent of residents have a degree or equivalent. About 50 percent are in full time employment, 17 percent in part time and 30 percent are not employed. Opawa has a slightly lower income base than St Martins and Beckenham due to Housing NZ homes and smaller units for elderly people. State housing was also built in Opawa like other suburbs of Christchurch in the 1950s and 1960s. Older style and large Victorian homes housed the owners of many now disused industry and businesses located adjacent to the Heathcote River and the rail link to Lyttelton Port. The Tannery, a boutique shopping complex is an example of repurposed industrial building in the next door suburb of Woolston that provides extra shopping and social activity for the area.

Opawa Primary school takes children from Opawa and surrounding nearby suburbs is decile 5 with school roll of about 480, while St Marks a private primary and the alternative Rudolf Steiner School take children from across the city. A fourth primary school Te Kura Kaupapa Māori o Waitaha in Waltham is on the edge of the suburb and may take some children from Opawa. The Ministry of Education has identified that this school is to be merged with Te Kura Kaupapa Māori o te Whanai Tahi at some stage. No timetable has been set for this merger.

The Council Community profiles describe a high number of sports and leisure groups across the three suburbs. In 1943, Sir John Mackenzie bought the historic property Risingholme, which he then presented to the city to be used as a park. In 1949, it became one of the first community centres, and still operates today. The Risingholme Community Centre provides educational and craft style activities to local communities, although the main heritage building was damaged by fire in 2016. The rebuilding and reopening of the St Martins New World in September 2012 provides important local supermarket shopping.

Phillipstown



Figure 4.5: Suburb of Phillipstown

Phillipstown one of the earliest settlements, is a small and older inner city suburb to the south-east of the city centre. The population has increased from about 3000 in 2001 to 3786 in 2013, an increase of 8.5 percent between census. More of the population is male (1983) to female (1803) compared to the rest of the city with greater numbers of females. More than half of the Phillipstown population is under 35 with the largest number between 20 and 24 followed by 25 – 29. Many young occupy the medium density developments. Residents are 65 percent European, 18 percent Māori, 7 percent Pacific Peoples, 11 percent Asian and 3.7 percent other, which includes those who indicate New Zealand rather than European (StatsNZ, 2013).

Phillipstown has traditionally been a lower socio-economic suburb. Residents working within the central city and the industrial areas that surround it were hit hard by the loss of employment following the earthquakes. A higher percentage of residents belong to single parent households, but many are also long term. Households are made up of 41 percent couples without children, 30 percent one parent families and 30 percent couples with children. Many rent (65%) and 32 percent are partly or fully owned and two percent in family trust. Phillipstown incomes are generally lower than the rest of Christchurch, with on 13.6 percent earning more than \$50,000 compared to 27 percent of the rest of the city; the medium income is \$25,000. About half of the population is in

full time employment, 30.9 percent are not employed and 9.1 percent unemployed (StatsNZ, 2013). The most common occupational group are technicians and trade workers. The deprivation scale in Phillipstown has reduced between the 2006 and 2013 census. This may have changed because of people buying into Phillipstown post-earthquake from less deprived suburbs that were red zoned in the east of the city. Increasingly there are housing rental issues especially for those requiring more affordable housing, as rents increased after earthquake repairs (StatsNZ, 2013).

Phillipstown still contains many smaller older style homes wooden with front verandas typical of the early colonial style. More of these turn of the century, wooden homes are increasingly being lost due to the development of mixed density homes. Large roads delineate the suburb with Tuam Street north, Oliviers Road east, Ferry Road south and Fitzgerald Avenue to the west. Phillipstown is a variable mix of residential, industrial and commercial areas with significant zoning allowing L2 and L3 or medium density developments. This style of development has seen an increase infill housing of townhouses and flats, where most outdoor space, private or communal is generally dedicated to car parking.

There are two early education providers Te Hohepa Te Kohanga Reo and Kidsfirst Kindergarten. Phillipstown primary school (Decile 1) was closed by the Ministry for Education after strong community opposition in 2014. The school originally founded in 1877 was amalgamated with Woolston School on their site in the same year, now collectively renamed as Te Waka Unua. The attached technology centre specialising in manual training for children from smaller schools across Christchurch still use this facility. Phillipstown children now need to cross large and busy roads to get to school. Linwood College (Decile 2), a high school located in the south east of Phillipstown. Access to health and dental services are poor and away from the suburb. Residents have access to a small group of shops along Ferry Road, but need to travel to other suburbs such as the central city or to Eastgate Mall for a supermarket.

Phillipstown Community Centre Charitable Trust started in the late 1990s was formed by parents of Phillipstown School children to provide a place to go before school. Originally parents used to meet in fine weather in the park and in bad the school staff room. Finding this arrangement inadequate, the Trust applied for funding for seed money to develop a hub. This has moved to the previous Phillipstown school site and is managed in partnership with the City Council and the Ministry of Education (land owner). A coordinator is funded to support community groups, organisations and agencies that use the Phillipstown Hub. It is a place for resident groups to meet

on weekends, week days and evenings, and still includes the OSCAR²² programme and breakfast club. This hub is an important meeting place for different groups across Phillipstown and nearby suburbs given the lack of facilities (Phillipstown Trust Manager, pers comm, 2016).

4.4 Method

Potentially, many methods could have been used to explore the research questions, as in human geographical research no single research method will hold the key (Hoggart, Lee & Davies, 2002). Rather than focusing on specifics, I wished for a more subtle approach to help understand the broader context of what occurred, to be more interpretive in examining what assisted and enabled the collective behaviour that occurred following the earthquakes. I also wanted to be flexible. Phillips (2014) referred to Barton (1970) in discussing how disasters often can reveal social problems or connections and how flexibility is required to understand the importance of social networks and structures that support resilient communities.

For this research, I am taking a critical realist approach. Critical realism investigates events or outcomes (Easton, 2010) and is suited to exploring the external and observable behaviours of people or systems as happened. It allows the study of structures, causal relationships, and the aggregation of levels to recognise connectedness and connections among people and events. It is suited to this type of research because critical realism argues that the world operates as a multidimensional system (Mir & Watson, 2001). Importantly, critical realism also allows for data such as verbal accounts to be biased or socially constructed (McEvoy & Richards, 2006).

In practice, because of the complex nature of the world, there needs to be recognition of the different possible explanations or interpretation of the data. It is necessary, therefore, through the research to continually review to attain the best possible explanation for what has been uncovered. Sayer (2000) discusses the two broad groups of research methods: extensive and intensive. Extensive methods involve large scale survey and statistical analyses to identify patterns. Intensive by comparison focuses on the interview and qualitative analysis asking questions about what makes change. Coming from a quantitative marine ecology background (my Master's degree), the use of qualitative methods was both new and challenging. My reading, however, determined that qualitative methods were well suited to obtaining an in-depth understanding of the how and why of post-disaster community recovery (Denzin & Lincoln, 2000). Other researchers investigating social and community experiences also use qualitative methods to

²² Out of School Care and Recreation

reference the importance of providing the social context (Bolin & Stanford, 1998). Qualitative methods were, therefore, my chosen primary approach because I was interested in examining the subjective meaning of people's experiences of the disaster, with reference to their neighbourhood and their connections within it and to the city.

Case study suburbs were included in this research to provide deeper understanding of resident experience and knowledge of their neighbourhood following the Canterbury 2010-2012 earthquake sequence. Case study research can refer to different practice; it is a type of study rather than a method with clear rules (Easton 2010). The use of case studies in this research is applicable because like qualitative analysis is suited to the how and why questioning, where an explanation is needed (Yin, 1989). This allows the researcher to tease out complex factors and relationships (Easton, 2010) and to address the three aims of this research to:

1. Describe the community response of suburbs in Christchurch following the Canterbury 2010-2012 earthquake sequence.
2. Explore the key features of the urban environment, the built form and social infrastructure that was important to helping to develop a sense of place and the emergent local leadership.
3. Explain how understanding these could influence future planning for resilience.

To ensure adequate data were gathered to address these questions supplementary data sources were included. Informal interviews were followed by qualitative interviews with key informants and then participants from case study suburbs that also included a simple mapping exercise. To this a short quantitative survey was included. I reviewed and carried out a content analysis of the literature describing the earthquake sequences and what followed over the intervening years. Figure 4.6 provides a summary of the capture of data. The participant interviews were approved for use by the University Human Ethics Community (Approval number HEC 2014/153 is Appendix A and copies of the information sheet provided to participants and the consent form is Appendix B).



Figure 4.6: A summary of the capture of data

The next section of this chapter starts with a description of informal interviews carried out to develop a better sense of the post-earthquake recovery landscape in Christchurch. It continues with the formal interviews carried out with key informants and then participants from the case study suburbs. The following sections then detail how the key informant and participant interviews were analysed, including a more detailed description of the transcription and analysis process. Figure 4.7 below provides a time line to show the time course involved in each stage of the research. The chapter concludes with a review of the methods used.

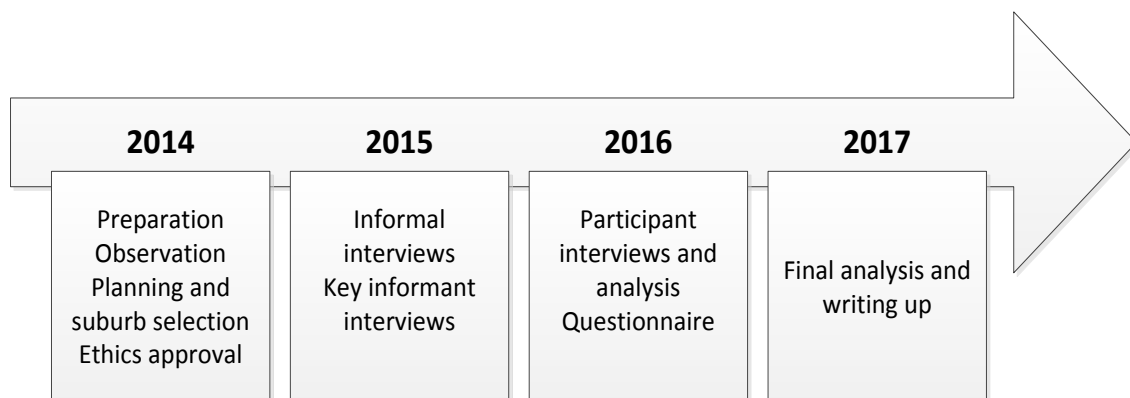


Figure 4.7: Phases of preparation, data collection and analysis

4.4.1 The interviews

The years of disruption have been difficult for many. Few studies have focused on the longitudinal affects after specific disasters Phillips (2014). This research does not do that either, but it does enable some comparison with those early studies carried out immediately post-quake. Dash et al., (2007) one of the few multi-year studies did look back 10 years at the effects of Hurricane Andrew on multi-ethnic working-class communities in southern Florida. The retention rate of the study was low because the researchers had difficulty finding original study recruits. Those found and interviewed showed similar patterns described by Christchurch residents, of being physically and emotionally exhausted.

This study started in 2014 with informal interviews to establish where to start. Key informant and participant interviews were carried out in primarily 2015 and into 2016; four plus years after the 2011 main earthquake sequence. Half the participants still had issues with the repair of their homes and about a third were still living in damaged homes. These are recurring themes for a portion of those I interviewed and were not uncommon for Christchurch. Interviews comprised three groups; informal, key informant and participant. Along with respondents to the questionnaire, these terms are used consistently through the analysis and following results chapters to ensure an understanding of where the contribution originates. When I write all interviewed, this refers to the informal interviewees, key informants and participants.

Table 4.3: Four groups of research participants

Who	Number	What
Informal interviewees	21 + 5	Unstructured informal interviews seeking background information and issues, plus who to interview and suburb choice
Key Informants	20	Semi-structured interviews with a focus on the first research question. Provide guidance for participant interviews and suburb choice.
Participants	38	Semi-structured interviews, informal mapping and questionnaire focused on the second and third research questions.
Respondents	186	Questionnaire for supporting data for participant component

4.4.2 Informal interviews

The research started with 21 informal interviews with former colleagues from the Council, CERA, Environment Canterbury (ECan) and Community Public Health (CPH) division of the Canterbury District Health Board (CDHB). Interviews were held with academics, elected local councillors, recovery managers and community leaders and others I had met in the Emergency Operations Centre after the 22 February 2011 earthquakes. The aim was to get a strong base of where to start. These interviews have not been included as results presented here; rather they provided the starting point to understanding what suburbs would be suitable for study and to help develop interview questions for key informants. This process also allowed me the time to understand who to interview given the breadth and scale of the disaster generating so much to study. Five additional informal interviews were completed toward the end of the data collection process with two

planning managers and three transport engineers to help confirm the Chapter 7 planning context discussion.

These interviews were for the most part unstructured, with general discussion often centred on what was observed at the time of the earthquakes. For others with specific expertise, the questions asked related to their area of expertise. Council community development advisors provided excellent insight on suburbs because of their experience in helping to develop the Council's community profiles. Also, all had been leading or participating in emergency operational teams in suburbs to support residents. Others such as public health managers had been involved in setting up recovery processes through the CERA or developing mental health programmes. Councillors had worked tirelessly across their wards following the September earthquake came with a deep and specialist knowledge of their areas and issues. Academics provided direction and enabled me to target specific literature. I asked each to critically reflect on that time and what would be of interest to research. All the informal interviews helped in the preparation of questions for key informants. These also directed me to other potential interviewees. From these informal interviews a list of key informants was drawn up, three informal interviewees were asked to provide key informant interviews: all agreed.

4.4.3 Key informants

A set of questions for key informants was piloted on two key informants, to check for relevancy and depth. The questions are listed in Appendix B. In total, I interviewed 20 key informants, all of whom had participated directly in the response to the 4 September 2010 and then 22 February 2011 earthquakes. Some individuals were interviewed in their formal role or capacity, including recovery managers, a school principal, local civil defence staff and others directly involved in the post-quake community response. The next set of key informants interviewed were individuals who had emerged out of their communities as leaders and who had facilitated a neighbourhood, community or suburb response. Key informant interviews continued until theoretical saturation meant nothing new emerged.

Table 4.4: Key informants, their expertise and area of knowledge

KI	General role	Geographical area of familiarity
1	Ex-local elected councillor	New Brighton, eastern and coast
2	Health sector manager	All of city and surrounding towns
3	Business owner / elected community board	Rangiora, Avondale and coast
4	Kaumātua ²³ , Māori liaison	All of city and Banks Peninsula
5	Communications expert, community leader	All of city, Southshore
6	Chair marae, civil defence	Central and inner north
7	Principal – High School	South and south west
8	Recovery manager	North west city, Waimakariri District
9	Sustainability recovery advisor	All of city
10	Elected member of parliament	Port Hills and Lyttelton
11	Health sector, mental health specialist	All of city, southern and hill suburbs
12	Community psychologist	All the city, southern suburbs and Port Hills
13	Community development support	Lyttelton and Harbour Basin
14	Community development support	Central city, south and east suburbs
15	Community development support	Phillipstown and eastern central city
16	Church and community leader	South and southwest
17	Local community leader	Heathcote and hill suburbs
18	Local community leader	Sumner, Clifton Hill
19	Sustainability expert, community worker	Port Hills and eastern and coast
20	Transitional art and community leader	Port Hills, south and central city

The first set of interview questions (Appendix C) asked key informant about their background, their expertise, and how they had been involved in the earthquake response. A second set explored their understanding and experience of community, leadership, and resilience; the third sought an explanation of the role of social connectedness and whether this contributed to enabling collective effort. The fourth part of the interview was less structured and involved asking the lessons learnt, and what advice key informants would offer to help build resilient communities. Finally, key informants were asked if there was additional knowledge they would like to share or if there was anything they wished I had asked. I transcribed the audio-recorded interviews as soon as possible using a free software package and headphones, as detailed later in this chapter. Most interviews were between one and two hours in length, a few were much longer.

²³ Kaumatua, Māori elder who is held in high esteem often holding tribal knowledge or practice.

Key informants were specifically asked if they preferred to remain unidentified. Sixteen elected to use their real names citing that they had said much of what they had told me in public. Four elected to use pseudonyms because of their current employment status, even though three had sought and been granted permission to participate from their managers.

4.4.4 Participant semi-structured interviews and questionnaire

The questions for participant interviews were developed from the discussions with informal interviewees, from key informant interviews and from the literature. Pilot interviews were carried out on two participants who were not included in the analysis because they were familiar with the research. The pilot interviews were to ensure questions were not ambiguous and were focused on what was needed to answer the research questions. The first set of questions asked participants to describe where they live, their street, neighbourhood and suburb, and what they would like to see change about where they live. The next focused on the social and physical elements, who they socialise with and where, if they belong to local groups and whether they have or use local shops and amenity. The final set of questions was directed toward the earthquakes, September and February, what was important during that time and what they did. This ordering was deliberate to ensure time was given to the ordinary days in their neighbourhood. Questions asked of participants are in Appendix D.

Participants

The recruitment strategy for participants aimed to find similar numbers of women and men relatively representative of age groups. Thornley et al. (2013), for example, deliberately used groups to select more participants from nominated populations. I recruited participants by starting with a main contact in each suburb through colleagues and acquaintances. These participants then put me in touch with, for example, a work colleague, their sibling, or yoga teacher. I then used the snow ball technique to interview their neighbours or an acquaintance nearby within the same suburb. I found it difficult to recruit Pacific and Asian people. Few interviewed could direct me to neighbours or friends from these groups in their suburb. I also asked individuals I met walking down a street or in a park and from these interviews I could speak with their neighbours. I knocked on doors in one suburb and in another used a community centre contact to complete the interviews. I was aware of inter-subjectivity and the need to limit the use of friend contacts to get a broader sample of population as possible. Still, this may explain why more interviewed were in the same age bracket to me. I was also aware of the bias and greater ease of interviewing women who were more responsive to participate (Biernacki & Waldorf, 1981). Within two households with a male

and female able to be interviewed, participants self-selected suggesting that I speak with the woman, as in their words ‘they liked to talk more’. I had to deliberately target men to ensure I did not attain a gendered specific narrative; still 24 out of 38 or 63 percent of those interviewed were women. More men refused to be interviewed.

Participants ranged in age, from 21 to the eldest, a woman in her mid-eighties. The age groups are listed in Table 4.5. Participants were mostly of European origin, although four had partners who were either of Māori or Samoan origin. One was of mid Asian ethnicity but whose family had lived in New Zealand for generations. Two participants had grown up in North America and three were from the United Kingdom. Participants have a range of occupations and these are listed in Table 4.6.

Table 4.5 Participant Descriptions

	Hoon Hay	Merivale	Opawa	Phillipstown	Number	Category %
Number participants	10	9	10	9	38	
Female	6	6	6	6	24	
Male	4	3	4	3	14	37
Age category						
21 - 30	1	0	0	1	2	5
31 - 40	3	3	1	2	9	24
41 - 50	3	1	3	0	6	15
51 - 60	1	4	3	4	12	32
61 - 70	1	2	1	0	4	11
71 - 80	1	0	0	2	3	8
81 +	0	0	1	1	2	5

Table 4.6 Participant’s occupations

Hoon Hay	Merivale	Opawa	Phillipstown
Student	Policy officer	Photographer	Painter
Childcare worker	Economist	Teacher support	Advocate
Pastor	Teacher	Nurse	Home carer
Home carer	Dentist	Travel agent	Home carer
Builder	Finance specialist	Yoga teacher	Shop employee
IT specialist	Professor	Business operator	Youth support
Environment specialist	Lawyer	Financial advisor	Retired
Teacher support	Teacher	Planner	Retired
Retired	Business support	Home carer	Retired
Retired volunteer		Retired	

Questionnaire

A quantitative questionnaire was included to add a more mixed method. This questionnaire was not designed to draw out specific data per se, but to provide a broader understanding from a larger sample within my selected suburbs and across other city suburbs. This second phase of the research aimed to explore a more general overview, to support the qualitative interviews.

The questionnaire used a form of Likert scale, with the options extending from strongly disagree, disagree, and neutral to, agree, strongly agree and don't know (see Appendix E). The Australian Neighbourhood Survey and other such surveys were used as a starting template for creating the questions. The 27 questions were structured similarly to the semi-structured interview questions, relating to neighbourhood then their experiences through the earthquake sequence. This included personal details about the participants themselves, their gender, age, who lives with them, tenure and length of residency. The next group of questions related to the social dimension about their neighbourhood, their similarity to and relations with their neighbours, if the residents in the street were welcoming and friendly and safe. Talen (1999) reviewed studies and found these variables may have an influence on residents' sense of community as well as interaction with others. The questionnaire inquired about how they valued and their use of social infrastructure. The final questions related to the earthquakes, if their neighbourhood provided support, about local leadership and access to resources.

Supplementary respondents from each case suburb and from suburbs across the city completed the questionnaire. This was also to establish if it was possible to contribute to the data about the people who live in each of the suburbs. Those interviewed could have not necessarily been representative of their suburb but expectedly could be typical of those who also live there (Greele, 1991). Between 15 and 20 additional residents from each case study suburbs completed the questionnaire and an extra 79 residents from suburbs across Christchurch to check similarity or differences across suburbs. Respondents lived as far south in Rolleston to the north in Belfast. See Table 4.7 for the numbers for each suburb, Table 4.8 for numbers on age and who, and the percentage renting.

In the study suburbs respondents were recruited through a variety of means, I asked individuals walking down the street, in shops and others gathering in parks. It was difficult to find sufficient residents in Hoon Hay and Phillipstown to answer to the questionnaire without targeting specific groups, such as church attendees in Hoon Hay, or in Phillipstown those who attended the Phillipstown Community Hub. Few people could be found on the streets there. For the extra 79

residents I obtained responses from workers in shops or offices, visitors to parks, people on the street and I went to children's sporting activities across the city, to shops and cafés and community events and asked workers doing repair work on homes. I personally spoke to everyone who completed the questionnaire. About half provided verbal responses through casual conversation or their questioning of the research. All comments and points of interest were documented and where useful were included comments in the write up.

I had intended to carry out focus group interviews in the studied suburbs, however, the wealth of data obtained from early informant interviews, key informants, participants and respondents meant these were not needed.

Table 4.7: Number of questionnaire respondents by suburb

Suburb	Number
Hoon Hay	29
Merivale	26
Opawa	25
Phillipstown	27
Others	79
Total	186

Table 4.8: Questionnaire respondent's age and housing tenure

Characteristic	# Respondent	% Respondents	Renting	% Rent
Gender (n = 186)				
Female	118	64		
Male	68	36		
Age (n = 186)				
< = 20	9	4.8	4 ²⁴	45
21 - 30	29	15.6	20	69
31 - 40	37	19.9	14	38
41 - 50	25	13.4	6	24
51 - 60	44	23.7	6	14
61 - 70	21	11.3	5	24
71 - 80	17	9.1	1	6
81 +	4	2.2	0	0
Total	186	100		

²⁴ Four of this group of participants rented and the remaining five lived within their family home.

4.4.5 Confidentiality considerations

Christchurch is a small city, commonly referred to as having two degrees of separation with many connections among residents. The connection made me aware of the need for strict confidentiality. By way of example, three participants from different suburbs and who may not know each other, attended the same funeral on the morning of the 22 February earthquake. Two people preparing for the funeral after-function in Sumner were killed from rock fall caused by the earthquake. I was made aware of the connection because all three spoke of how lucky it was the funeral was not an hour later.

All participants signed a confidentiality form where I guaranteed that any identifiable information would not be included within this study. I assigned pseudonyms and changed personal details to ensure they could not be identified. In the literature, anonymity has been frequently used to mean confidentiality (Saunders et al., 2015; Kaiser, 2009) and to mean that all data is kept private except from the researcher. Saunders et al., (2015) discuss how confidentiality means keeping private what has been said by participants and that can only be achieved by not sharing the data. What is of interest is that participants are not able to be identified and so remain anonymous. This is a complex arrangement, disguising names and places requires a certain balance with what to select from the interview transcriptions, especially the sharing of sensitive and personal information about themselves and their neighbours or friends. This includes their religious or cultural backgrounds, occupations or extended relationships. Despite this effort, full anonymity cannot be guaranteed, but I did my best to ensure confidentiality.

4.4.6 Carrying out the semi-structured interviews

All interviews were set up in advance and at the convenience of the participant. I confirmed by email and for two, by phone, before speaking with them. All participants were interviewed by me at a place of their choice to ensure their ease (Crang & Cook, 2007), their home, a café or place of employment. Most participants were interviewed at their home allowing opportunity to initiate casual conversational interaction about day to day things, before moving into an agreed time to start. I asked if they had read the background information and to sign the confidentiality requirements. Prior to the interview, I asked participants to fill out the short questionnaire. The questionnaire allowed me to test some more open-ended questions later in interviews. For example, if a participant disagreed that a local primary school was important, I could casually ask some time later where they or their children attend or had attended school.

For the interview, I used a general checklist, listened carefully and took notes. I asked all participants questions in the same order. Following questions on the earthquakes, participants were asked to reflect on what had changed. They were provided with time to wander and tell their story of that day and the ones that followed. Sometimes participant did not answer chronologically coming back to previous questions to tell me more. It was important to tease out any nuances relating to the individual as well as collective responses. All interviews ended with an open question so participants were free to add anything they felt I had missed or they needed to say. Some took this as an opportunity to elaborate further, connecting points previously discussed. This provided interesting insights and unexpected directions. I also took field notes of their non-verbal language as they were speaking, for example, if they emphasised movement such as waving their arms, became agitated or looked into the distance, laughed or wept.

After the interview questions were completed, participants were provided with maps of their suburb and city. I asked they draw on the map the routes they take to their everyday places, children to school, the supermarket, where they exercise and route they take to work. I asked they place a mark on the map where family and friends live and where they socialised and met their friends. Often when asked to show where they walk and meet others brought about a much deeper and clearer picture of how they use their neighbourhood. This exercise was included in the interview transcript. This gave a more nuanced and spatial understanding of how participants move within their neighbourhoods and around the city.

Interviews ranged in length from the shortest of 35 minutes to the longest at just over two hours. Interviews were transcribed immediately usually the next day using the same method for key informants.

4.5 Analysis

This section first focuses on the transcription process of over 70 hours of audio-recordings collected. One hour of interview took between three and four hours to transcribe. All data were kept in a secure location as required by the ethics committee. Early in the process a system was set up to deal with the verbal and physical cues observed through the interviews. No universal transcription format exists but McLellan, MacQueen and Neidig (2003) offer principles for developing transcription rules and protocols. These generally are to:

- Preserve the word forms of commentaries using punctuation as close as possible to how is spoken.
- Keep the text clearly structured by speech markers
- Generate verbatim accounts of what was said

- When provided with details of others in their lives ensure confidentiality.

All interviews were fully transcribed as they were spoken with the same method applied consistently. I transcribed all questions and comments as they were spoken including comments and responses added by me, I included extra information on pauses, reactions or emotions. The name of anyone mentioned in an interview is referred to by a pseudonym using the letter of their name.

Table 4.9 Meanings applied to transcript system.

Meaning	Symbol used
Pauses – not timed but roughly indicated by the length of __	short__ long _____
Reaction or emotions described	(tearful), (laughing)
Text transcribed but not used in quoted extract

4.5.1 Analysis of transcriptions

I analysed each transcript several times using a thematic approach. Specific features were noted of where participants lived, what arose to help understand their experience, what was important to them and what they did following the 22 February 2011 earthquake sequence. This qualitative data provided a breadth of information that needed to be categorised (Gibbs, 2002). I used the software programme QSR NVivo to code transcribed data and to systemically assign identified themes. This enabled me to link and analyse data in a thematic way. I began the data analysis soon after completing the first interviews. Early on, the data showed strong themes very quickly even after only three or four interviews were analysed. It became possible from an early stage in transcribing and review of the transcripts to compare commentary and to identify specific observations.

Codes were the first general themes or features of the data that aligned with my research questions. I used memos as a way of further coding and developing the analytical context of data gathered. I immediately wrote a memo as per Gibbs (2002) as descriptive journal notes to capture my first thoughts on the data collected. These were cross referenced after the interviews were completed. Memos enabled me to refer back to my research questions, to identify patterns and the language used by participants to describe their experiences. Memos also helped me to consider the subtext and to find what was unexpected. My approach to coding was to read through and write notes where words or groups of words described a theme, thereby creating a quasi-classification table.

Coding notes used as an example:

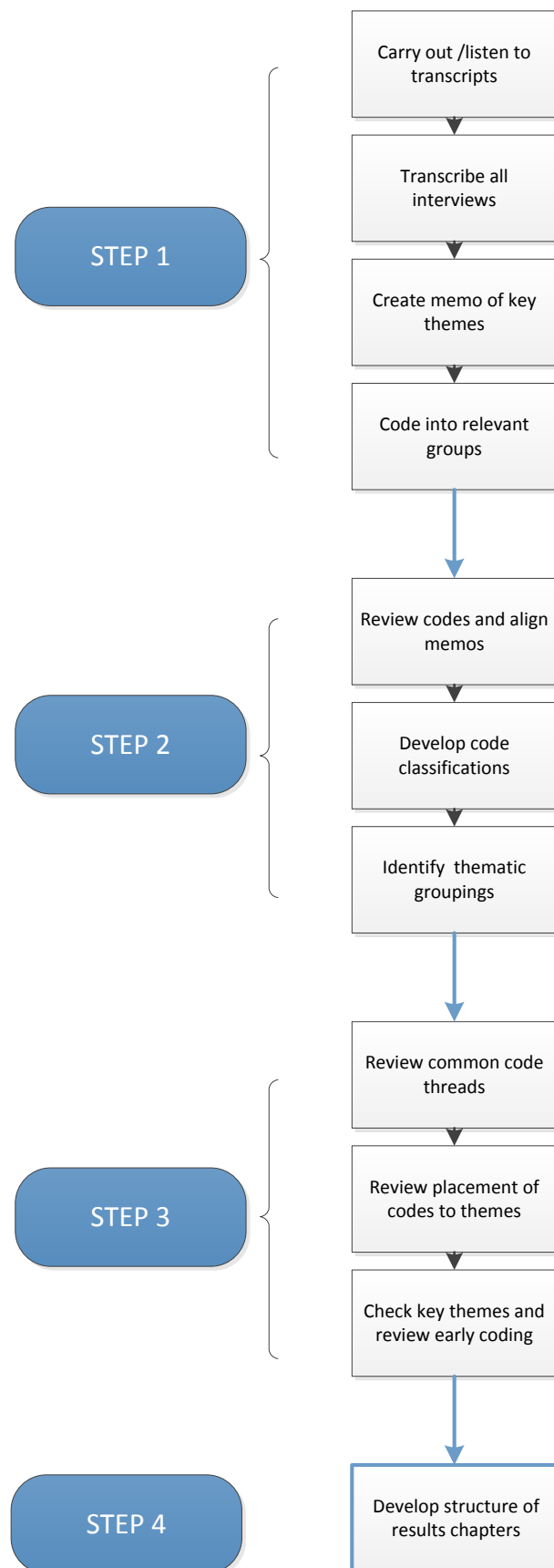
Tag:	Bumping places
Defined as:	Words or references used where people informally meet others
Description:	All references about casually bumping into others, seeing others, gathering or chatting to others
Example:	‘they say there are no bumping places in Phillipstown’

This meant coding was consistently applied using a constant comparative method provided by Phillips (2014). The findings were systematically written up, adding to the text after each interview. Initially, I was not sure how many to interview in each suburb, but after checking for data sufficiency I found a reasonable balance at about nine or 10 per suburb.

The third step was a general thematic review. Here time was spent analysing and reanalysing, reading and re-reading transcripts to ensure consistent meanings were applied across all. This way I could identify the most important themes and helped to refine the focus, clustering themes into relevant groups. What I found important, was prior to the interviews, I had taken the time early in the process to read broadly across the literature of different disciplines that helped me to understand what I was hearing. It is interesting to note that many participants used an abbreviated language easily understood by an insider to the earthquake and I took special note of these. The process used to analyse the transcribed data can be found in Fig 4.8.

NVivo was also used to store relevant journal articles, reports and newspaper articles to help interpret what was said.

Figure 4.8 The process used to analyse transcribed data.



4.5.2 Mapping analysis

The routes and places were mapped on to ArcMap 10.2 in a simplistic form to show the activity space or spatial boundaries of participants from each case study suburb. The first maps produced showed polygon data for all participants. The final maps produced here were simplified to provide a broad view of participants' activities within each suburb and across the city.

4.5.3 Questionnaire analysis

For the questionnaire, the Statistical Package for Social Science (IBM SPSS Statistics 22) was used to analyse the results. Initially I did simple graphs and tables and descriptive analyses for all variables for each case study suburb and the collective suburbs. ANOVA (Kruskal Wallis test) was then used to test for any significant differences between the means of groups for suburb, age, gender and tenure and all other questions. Quantitative analyses did not find significant results for variables of means across suburbs or between suburbs apart from one. Significant differences were found within the means among groups for only one variable, this was among Phillipstown respondents who did not feel at home there.

This lack of significance is understandable given the small number of individuals surveyed within in each of the case study suburbs. In addition, these suburbs were selected based on a range of different living environments, with varying mix of residents across age groups, housing situations and socioeconomic means. This was because the intention was not to make a comparison between suburbs, but to identify how the features of each contributed to community responses. Although the quantitative analyses do not specifically contribute to the analysis, the questionnaire provided additional data through two means. First because participants were asked to complete the questionnaire prior to the interview and this provided the possibility for questions to be raised in the less structured part of the interview later and were added to qualitative data set. And second I met with and spoke to nearly all the questionnaire respondents. As respondents wrote their answers to the questionnaire, they asked questions, they spoke about their experiences and what they had seen or understood. I have included these comments as part of the qualitative data.

4.6 Chapter summary

This chapter described the mixed method used to collect empirical data to answer the first three research questions. First, I provided an overview of how the case study suburbs were selected by 21 + 5 informal interviews and context analyses of the grey literature. These informal interviews also helped to ground and confirm the direction as well as set up questions for 20 key informant

interviews, which provided a greater depth of understanding of direction for study and helped build the participant interview questions. Thirty-eight participants volunteered to be interviewed from the four case study suburbs designed to explore their experiences and every day practice within their neighbourhood. This was followed by questions on their experience of the earthquake period. A questionnaire did not provide additional quantitative data but did confirm what was being told through the interviews. In the interviews I asked participants to map how they use their neighbourhoods. This exercise provided a rich additional data of how participants from each suburb use the broader city.

This chapter outlined the methods used to select case study suburbs and to collect the data. The next two chapters focus on the data narratives to meet the first three research objectives. To address the first research objective Chapter 5 uses the narratives of key informants and participants to provide a generalised view of responses in city suburbs and the case study suburbs, which been combined and distilled into a single account. To help with clarity of who has spoken from which data source, I use the terms key informants, participants and respondents consistently through the write up.

Chapter 6 then focuses on the narratives of participants and to some extent key informants about the features and everyday practice in relation to neighbourhood.

Chapter 5: Results - The earthquakes - the blanket that covered us all

5.1 Introduction

This is the first of two results chapters. Chapter 5 addresses the first research question, to describe the community response following the Canterbury earthquakes. I draw on accounts from key informants who worked in damaged Christchurch suburbs and participant interviews from the four case study suburbs. Everyone interviewed was affected in some way. Experiences were different depending on a personal home situation, neighbourhood and social connections. But there was also much in common. The chapter is divided into nine sections. The first sections report an overview of the post-earthquake experiences in the immediate aftermath. These are followed by sections where participants describe their neighbourhood and suburb responses and what was important, what was observed of the social connections and leadership.

This part of the research mirrors the findings of other studies investigating the Canterbury earthquakes, (Thornley et al., 2013, 2015; Yanicki 2013; Wilson 2013), specifically the varying forms and levels of collective action across places. Some suburbs were observed to have a stronger level of connectedness, resourcefulness and adaptation. These studies concentrated on specific groups and suburbs, some with a higher concentration of vulnerable people or were recognised for their collective action. Suburb and community group selection for the study by Thornley et al., (2013, 2015) was based on advice of an advisory group. This group recommended both well differentiated geographic suburbs and communities of interest. This research has a focus on suburbs more typical of Christchurch. Phillipstown is the exception potentially having a greater vulnerable population. I deliberately avoided areas of the city where significant amounts of research had been carried out previously.

Like most residents of greater Christchurch, many of those I interviewed had told and retold their stories over the intervening years. Recollections draw on their memories and these may have altered with the retelling and hearing the stories of others, adding layers of different interpretations of the events participated in or witnessed. Many interviewed initially had trouble with time, about what happened and when. An emotionally stressful event and an individual's experience are perceived and processed separately (Pezdek 2003). Pezdek's (2003) study examining the memories of the 11 September 2001 disaster found the more emotional information was available in memory, as is more likely to have been rehearsed and therefore better retained. During the interviews, participants would reflect, often coming back to previous questions to add more detail, especially about the February 2011 earthquakes. Participants described the hours after the main

shock as they walked home, drove across the city to find family and friends or waited with children and neighbours. As participants answered many found themselves in tears, surprised at their response after the intervening years. Consequently, in writing this chapter I found it difficult to find a suitable and consistent voice. As someone trained in policy writing and quantitative analyses, I naturally tend to the third person. But because of the intimate and extraordinarily generous conversations offered to me, this chapter is written in a more subjective tenor. All interviews were very personal, making it very difficult not to write of everyone's story. As a matter of respect to those who told me their stories, more quotes are used here.

Key informant narratives are identified separately to participants by the use of KI after their names, for example, Lucy KI. Suburb participant narratives are identified by their pseudonym and their suburb in brackets, (Hoon Hay), (Merivale), (Opawa) and (Phillipstown) as show below. There were many tearful moments.

Lucy (KI): *Makes me weep, weeping is a big part of the healing, (laughs) there are many tears in recovery and we are not even close.*

Sheila (Phillipstown): *We just randomly weep ... I get upset at the good things, random acts of kindness start me off, when I start talking about the police and all the work they did I can't talk about it (weeping and holder her hands tightly).*

5.2 After the earthquakes

5.2.1 4 September 2010

The first questions were directed toward the September 2010 earthquake. Not all participants could remember September, given the focus caused by the damage from the February 2011 sequence. Most participants initially referred to 4 September 2010 as being just a normal day, but then relayed details of the noise or movement caused by that earthquake, as reported by Margie and Chris.

Margie (Opawa): *We hear of earthquakes in the different parts of the world but you don't hear how it goes on and on and on. And the thing is they are so rowdy it is like a freight train coming through your house it is so loud, a train beside your bed.*

Chris (Merivale): *I was outside in Spencer Park having time out camping and I remember seeing the radiata pines were being shaken like little rag dolls, those massive trees being*

shaken like that. The one thing that hit me the most about the earthquakes was the noise, it is shocking and how loud it was as the ground groaned.

Most recollect standing out on the street with neighbours in the early morning with torches flashing. Joan who is elderly and lives alone was frightened and sought out company.

Joan (Phillipstown): *I looked outside but you couldn't see much, people came from everywhere out on the street.*

Others like Grant immediately checked on family and close friends and then neighbours.

Grant (Phillipstown): *It was cold and I put on multiple layers of clothing, banged on doors and checked on people, we finally went and connected with my sister. It really was about connecting and checking on people.*

June as a volunteer for St John, helped set up a welfare centre in Burnside in the north of the city later in the day. She described it as helping people, especially elderly people.

June (Hoon Hay): *All those old people terrified in their little ownership flats... all alone.*

Realising elderly people needed company, June arranged for groups of four to six who lived near each other to get together and keep in contact as a support network. She spoke of how they would come back the following days for a cup of tea and a chat. It was clear to June that these elderly individuals had few family or friends close by. Most participants made some comment about the awfulness of being alone at this time and how frightening this would be. They talked about checking on their neighbours especially those who live alone. All but one interviewed spent the day with family or neighbours in some form of communal setting.

Adrian (Merivale): *Jane and Dave came over too, along with Alistair and Jo next door neighbours and he set his BBQ up at the front on the driveway and we just brought our perishables, and we just all sat and ate. So we spent time with our neighbours. That was cool, so that earthquake was mostly chimneys wasn't it. So that day was removing chimneys and being very social.*

Carole (Opawa): *I gathered my family and went and got mum and kept them safe here, connected with the neighbours on that side and behind us (pointing) and just checked that everything that was ok including the man on his own three doors down. So in September it wasn't a big one once we got over that shock.*

Interestingly, September was a large earthquake causing significant damage. The media reported that no one died²⁵ as a direct result of the earthquake because most people were home in bed. This earthquake sequence caused significant damage to heritage buildings in the inner suburbs, the central city and homes close to the epicentre near Darfield. The Canterbury District Health Board had an increase in cardiac arrests in the following days.²⁶

Two key informants who lived in South New Brighton and Southshore spoke of the panic of residents leaving that coastal area, for what they found out later, to be fear of tsunami. Both assumed this was in response to public education programmes for tsunami alerts that followed the 27 February 2010 Chilean earthquake and tsunami. This earthquake affected the East Coast of New Zealand a day later.

Bill KI: *I did a bit of geology at university so after the earthquake I didn't think much about it, (pause___) I knew that it wasn't a Chile or a Samoa so wasn't worried about a tsunami. But five minutes later I could hear the traffic. Later someone said to me that Rockinghorse Road was like a six-lane motorway, families had packed everyone into the car and took off. How they got over the bridge I do not know because there were gaps in the bridge that were that wide (arms spread about 75cm) and that deep (same) so they must have been flying.*

Key informants and some participants also described dealing with or knowing residents who left the city, some taking days and even weeks to return. Joan lives near a main road and noticed the traffic.

Joan (Phillipstown): *All you could see was loads of people in their cars filled with stuff as they were leaving. They had trailers and my neighbour who is opposite Aldwins Rd said traffic is heading off nose to tail, all heading to higher ground, the roads were grid locked.*

The September earthquake faded in to memory because of the strength and proximity to the city from the February earthquake. Damage from the September earthquake sequence also compounded the damage and destruction after February (CDEM Review, 2012).

²⁵ One death, a heart attack later attributed to the earthquake: <https://nzhistory.govt.nz/culture/canterbury-earthquake-september-2010>.

²⁶ <http://www.radionz.co.nz/news/canterbury-earthquake/57140/surge-in-heart-attacks-apparently-triggered-by-quake>.

5.2.1 Coming Home – 22 February, 2011

Disasters such as the 22 February, 2011 earthquake are distinguished by their magnitude and capacity to disrupt, affecting many residents at the same time. These disasters overwhelm the fabric of normal social life touching everyone to some extent (Solnit, 2009). Everyone I interviewed who was in Christchurch discussed the shock of that day. They spoke about the wonder of seeing buildings sway and bend, pressure waves radiating across parks and of everything turning to rubber. Beth was very clear about what she remembered that day.

Beth (Merivale): *I can just remember watching the corner of the building out the window moving against the sky and thinking 'ok, this is when I die'. So we leapt up and clamoured over everything and ran down the stairs*

Researcher: *So you didn't drop, cover and hold?*

Beth: *No I got out, I am heavily into flight. It's amazing what you do. Ages afterward I put on the coat I had worn that day and there was plasterboard in my pockets, (using her hands to show) everything was exploding, glass and the wall everything, stuff was flying.*

Claire remembers the fear on people's faces.

Claire (Merivale): *I was in Centennial pool and I was in the nude in the changing rooms and I thought 'holy moly here I am naked' and thought no one should find me naked, I evacuated out and saw all the dust and the terrible and frightened look on every ones faces, I will always remember (sitting silently for a moment).*

Participants expressed disbelief at what they saw as they walked home or moved around from the city to check on friends and family. Many remembered some of the small details.

Peter (KI): *And the other thing was the number of men's and women's shoes I saw when I was walking home, I could have started my own shop of second hand women's shoes (laughing).*

For those who were unable to get hold of loved ones, the time was very stressful. Participants referred to the panic of not being able to reach family and especially children.

Chris (Merivale): *My kids were in Cashel Street Mall and were evacuated into the middle of death and dying. And it was hard....my daughter lost her light, the brightness is gone and PTSD is a real thing, they qualify for what they saw. I was home for the February*

earthquake but they were in the middle of it all by the central bus station and were evacuated.. and my wife (a nurse) was resuscitating people on the way out who could not be resuscitated.

Chris (weeping and holding himself) continued to speak about how he and his younger daughter went into town to find his two older children and his wife. He expressed surprise at the depth of his emotions still.

Chris (Merivale): *We got on our bikes and we biked through to Hagley to go and find Jude and the kids (very tearful) and we saw this big exodus and then we saw our family. What a huge relief, and all the shoes and all the people just walking home. So we turned around and came home together.*

Grant spent hours until the end of the day trying to contact family and friends, especially his sister and child who he knew were in the CTV building that had collapsed.

Grant (Phillipstown): *We checked on neighbours and others and then went to my sister's and she wasn't there and tried to tidy up and secure her place...and people gradually made their way there, our office was in the square so people said my sister was in triage in the square so I knew she was alive. It was pretty awful. But I knew my sister had been seen.*

Examples of individuals standing up and leading, helping or directing others started to come out through the first interviews. One key informant remembers standing watching a young man direct traffic, he was still directing hours later when another participant remembers seeing him as she drove back down that same road. He spoke of the wonder of everyone following his command.

Peter (KI): *I remember that day walking, most of the city had walked home and this guy was at an intersection, and it was havoc and it was just the presence of the guy, he was a stunning looking individual and they all did what he said, he had them flying.*

Researcher: *Was he a policeman?*

Peter (KI): *No. He was a long-haired guy, a nice-looking Māori guy with a fluoro on and was directing traffic. People stand up and do what they have to in the moment.*

Everyone described the need to go home.

5.2.2 The Following Days

Peter (KI): *I have been to event areas before, some of them are very traumatic and I realised that you need to provide korowai²⁷ support, I have seen it before, the support that everyone gave each other, the blanket that covered us all - and you know, I enjoyed that time, it is what makes us special when we all had time for each other.*

In the immediate aftermath, the usual routines of life stopped. This time was remembered as a mix of fear and joy. Fear of the earthquakes and the unknown mixed with the joy and delight in finding companionship and neighbourliness. It is important to distinguish those first days from the earthquake on the afternoon of Tuesday the 22 February 2011 to Friday the 25th when the informal voluntary action began to emerge. During this time there were many large aftershocks; 39 over 4Mw over six days and hundreds of less magnitude, but all clearly felt (GeoNet, 2012). The immediate formal response focused on retrieving survivors and then bodies, from the two collapsed office buildings and Victorian facades in the central business area, and several suburban centres including Lyttelton (CDEM Review, 2012). All interviewed made some comment about how everyone in greater Christchurch was affected and were part of the story. Beth noted the connection, while others were very clear about how everyone was similarly affected.

Beth (Merivale): *Hmm that amazing thing is not just neighbourhood based, but Christchurch based about the seismic activity is that we have a connection with every single person who was here then, whether we would have had anything in common with them before. Whether they are a murderer or a minister, whoever they are, we all have a story to tell about that time.*

Rosemary (Opawa): *We were all on the same level everyone was without electricity and everyone was pooing in the back yard, and everyone was the same, we were sharing a common experience, it brought us all together.*

Not only was everyone affected, but with that connection came the relief of being alive.

Shelby (KI): *An important thing to do was to get together and celebrate that you are alive.*

In response to this many like Kath, discussed the need to acknowledge and speak with others to be more engaged with other residents.

²⁷ A Māori cloak

Kath (Hoon Hay): *That is one thing I will say about when the Christchurch earthquake happened you would high five the person who walked by and people talked and smiled to each other here.*

Andy also observed the generosity of that time.

Andy (Opawa): *I remember driving home and seeing a guy walking home, a scruffy looking fella with tattoos and dirty jeans and he was carrying four heavy bottles of water and the car in front stopped and swung the door open and talked to him, he hopped in and it struck me, he was not the sort of guy people wouldn't normally stop and give him a hand. That was really cool. It can be good to be reminded of your own bigotry sometimes.*

Andy went on to talk about those first days and the importance of neighbours.

Andy (Opawa): *From what I heard and saw that a lot of stuff went by the wayside we remembered we are all eating breathing human beings, and we were all brought back to base but for most of us, it was our neighbours who were important and knowing that they were there.*

5.2.3 Family and neighbours

Family, friends and neighbours were foremost to managing as infrastructural services such as water, electricity and sewerage were unavailable. Like Thornley et al., (2013), participants spoke of the importance of pre-existing community connectedness in helping people to manage and adapt to the difficult circumstances. Most talked of living on the street and craving the company of others.

Irene (KI): *In a huge disaster, you cannot be everything to everyone, you must just need to make sure you are OK and you make sure your neighbours are OK.*

Neighbours being physically closest were important, especially for those with few family connections living nearby. As Martin describes there are common needs.

Martin (KI): *We had a common need, a common need for water, for information because electricity was gone, we had a common need for ways to share food and finding ways to cook it, a common need to empty the freezer.*

Most key informants lived in areas that sustained significant home and land damage, spending the first weeks working within their own neighbourhoods. Participants showed the same pattern of

remaining close to home. Homes with less damage and access to water became hubs for others, like Hayden and Ann.

Hayden (Phillipstown): *We were the hub because we have a wooden bungalow and it moves, and we had an aquifer in our neighbour's backyard so we had water we could boil and everyone came and stayed with us, my mum, brothers and granny came and stayed, my mate Johnny and partner and son and so everyone came to our house.*

Ann (Hoon Hay): *So our home became a place for family and friends who had no water or sewerage came and lived with us for three weeks as we had everything, we had people come and get fresh water and do washing and have showers all that stuff. So our home became a hub for family and friends....we knew it was structurally sound and was ok and so we stayed pretty close to home and we certainly weren't going too far from home and we haven't for a long time.*

Participants expressed their need to stay in their homes, to remain in their neighbourhood where they were connected. A participant from Hoon Hay stayed because she was comfortable surrounded by family and friends.

Debs (Hoon Hay): *I was pregnant with number three and we did wonder if it was sensible to stay from a health risk but I wanted to stay because I didn't want to leave anyone. Your home becomes quite important really. And the neighbourhood and that sense of everyone around us, I didn't want to go anywhere.*

Key informants working in the northern suburbs noted that many households left to return to their families in the older more well-established parts of the city, especially those with young families. Some participants, mainly those who were younger, moved around depending on their needs and if they were able, like Sarah.

Sarah (Merivale): *At that point my family were priority, I spent the next three weeks in Governors Bay, it was fantastic as people were providing us with water from exposed springs, we were all sharing stories and had an elderly neighbour who we looked after. She is quite old. Then I moved back to my house in Merivale tentatively as was nervous about being by myself...I couldn't sleep so I moved back in forth based on my need for sleep.*

Five participants commented on being called resilient, discovering they did not like the term given they felt they had no choice. There was discussion about needing to be stoic. The following responses came from two older women, who lived in Phillipstown, who lived alone who have few family members close by and children outside of New Zealand.

Phyllis (Phillipstown): *You really had to cope, didn't you, as we had no choice?*

Donnie (Phillipstown): *We had about three days without power and a bit longer without water maybe five days but I had 10 months with no toilet, I had a chemical toilet and I had to walk down the road and empty it but I could manage as I had to, there was no option.*

Sandra married into a large Samoan family, was one of the few who did not refer to neighbours as being important.

Sandra (Phillipstown): *I think east side did better in looking after each other heck yes, and us as a family we didn't need our local community because we have each other and there is a lot of us.*

5.3 Suburb, neighbourhood and community

This section discusses the broader neighbourhood and suburb responses. With the devastation from the earthquake and the loss of electricity and water, geographically near relationships become important. Nearly all participants talked about the importance of neighbours or others close by. Key informants and participants used the words community, neighbourhood and suburb in interchanging ways.

Libby (KI): *Russell Brand uses the term common unity for community, enough common unity a common purpose that is another reason why people came together.*

Most referred to their geographic community of neighbourhood like Sooze and Simon.

Sooze (KI): *I think I am a strong believer in community now, much more than I used to be.*

Simon (KI): *If there was a strength in the community prior to the event, then there was a strength in the disaster and recovery and so some communities are more community minded before and they do just become more so after.*

Key informants identified that the level of response was different across the suburbs depending on the level of damage. Where more homes and physical infrastructure was damaged, particularly for those places where residents had to vacate their homes, there was a greater focus on the well-being of neighbours, safety and access to food and services.

The suburbs that had been badly damaged or had experienced significant liquefaction after the September 2010 earthquakes were targeted first after February. Although within suburbs formal help was uneven. Dallington, for example, experienced significant liquefaction after both September and February sequences. Two key informants noted that some residents had several agencies knocking at their door on one day, but a cul de sac around the corner received no formal response. These key informants spoke about how these same areas received portable street toilets first while other badly damaged suburbs did not – separately calling it the ‘portaloo demise’.

Pre-existing social networks and connections were crucial. Five responded with a Māori proverb often heard in Christchurch, like Libby.

Libby (KI): *He tangata, he tangata, he tangata, it's the people, it's the people, it's the people. It is all about the people who you have created in your life, who are part of your life, you can't suddenly have a disaster and make three friends, it is those people who were already there and who you have looked after, it is all your connections. Every day is an accumulation of your life's every other day and the people, it is all the people and liking the people the more you do things, it is a whole lot of liking.*

Stronger community response is related to stronger social connections and networks. Key informants discussed the importance of being well networked, of knowing the well-connected people, and having strong community leadership. Like Aldrich (2012) not having networks can lead to vulnerability. Participants referred to managing well and that this was not about having money as such but about some sort of affluence, of being able to see possibilities. Participants stated if one was sufficiently affluent it meant they were used to making choices. Vulnerability lay in being “socially stuck” or “fixed” prior to the earthquakes. They also noted that many individuals across all suburbs could not cope and needed support. Key informants stressed that vulnerability occurred in both deprived and affluent neighbourhoods, describing it at an individual level where people coped and managed in different ways.

Shelby (KI): *One of the things I have observed working in Phillipstown is because I also work in affluent suburbs in the same ward is that some suburbs don't have that resilience,*

where in Phillipstown was very much yea another thing gone wrong in my life and shit happens.

Key informants and participants described how residents of relatively deprived suburbs like Phillipstown and Linwood tend to live more on the street where homes are smaller and older with verandas often close to the footpath.

Grant (Phillipstown): *I have such a vivid picture of everyone sitting in front of their houses sitting on their front veranda but if you don't know Phillipstown you wouldn't have seen this because it all happens between big roads.*

Phillipstown residents also said they knew each other because many do not drive they walk more and so see and know their neighbours. This may also apply to other higher deprivation suburbs, as noted by Peter.

Peter (KI): *Most marginal places like Aranui and Wainoni because of the social makeup they live in each other's pockets, they had this social connectedness that was always there.*

Both key informants and participants wondered how residents in large blocks of flats/apartments across Phillipstown and Linwood fared given the lack of communal space. Three spoke of those who rent the newer medium density housing, described as young, working and socialising outside of Phillipstown. Many were not seen after the earthquake. Only one participant in Phillipstown who lived in this housing type could be interviewed, they were difficult to contact or would not participate. Two younger participants living in Merivale medium density housing managed well. One returned to her family in Governors Bay, a small well-defined suburb in Lyttelton Harbour. The other, who is not from New Zealand, had friends nearby.

Key informants identified the same suburbs as not doing well. Key informant Martin who lives in Redcliffs arranged door knocking to check on people across eastern and southern areas with state housing. He described the lack of social capital as an issue.

Martin (KI): *We door knocked after the earthquake in state housing areas where there is a high turnover and people with social and emotional problems and where people are in social capital deficit (sighs). The response to the earthquake in Redcliffs got going in two days and was spontaneous with community organisations providing water and support. In the other community when people had to leave their houses the next door neighbours came and burgled them.*

Researcher: *Was that because those households needed things?*

Martin (KI): *In part, but it was also opportunistic.*

A key informant compared three inner city suburbs of high deprivation with those of low deprivation with suburbs on the Port Hills. Key informants and participants observed that having resources aided neighbourhood support.

Shelby (KI): *The responses were different rather than absent in the neighbourhoods where I worked, the suburbs on the Port Hills certainly helped because they needed to and they generally had resources and expertise to do this.*

Rosemary (Opawa): *I am just thinking about Aranui because I had a lot to do with it, after the earthquakes and although the school didn't get up and running for weeks, quite a few of us spent some time going around some of the homes to check that people were ok. It felt very disconnected there so I don't know if that is about low decile suburbs although there is strong social cultural connections there, although some of those are not that positive.*

Aranui residents are potentially some of the most disadvantaged in Christchurch. And because they live in identifiably deprived suburbs they had formal support, although as noted it took a week to get going. It was in lower socioeconomic neighbourhoods, and not necessarily the most deprived who were reported to be finding it hardest. Key informants pointed to those suburbs where the residents who managed least well tend to be working but income poor. Key informants who door knocked in the damaged inner city and eastern located suburbs told of how residents fled the city to family and friends outside. These working-class suburbs were particularly hard hit when employment ceased, especially for those who worked within the CBD. Many dormitory suburbs built in the 1950s and 60s had less observable collective response.

Sally (KI): *My sister lives in Shirley which was quite damaged... they went to the local school to collect water and stood in the rain waiting for a water tanker for four and a half hours and so many in the community were there waiting for the tanker, and for me it was the antithesis of community, it was people not knowing how to look after themselves – we took water off our roof, it was easy.*

Researcher: *Why do you think that was?*

Sally (KI): *Shirley, I would say is a very private, 'my house, my space' and people coming in is alien to them.*

Andrea spoke of how she accidentally set up a welfare centre in a similar quiet dormitory coastal suburb of North Beach, north of New Brighton. Andrea captured the essence of why and how she did this in her book “*Would you like a toilet with that?*”. Here she describes how she organised feeding up to 8000 people per day for many weeks. Andrea realised people were not specifically coming for food but for company – to be with others. This suburb was described by many as not having an observable collective response. Like other suburbs of the same era they tend to be large developments built on the flat during the housing boom following World War II. All are dominated by family homes, wide car orientated streets, and with little central social infrastructure. Within these suburbs, supportive networks were the result of individual leadership and long held neighbourhood friendships at the street scale, this is discussed later. Andrea spoke of her needing to do something.

Andrea (KI): *So six days after the February quake, I accidentally started a welfare centre in the car park of my lawn mower shop.*

Few people saw a suburb with no fuel or food. The phone towers were not functional and because no one was calling for assistance it was assumed there were no issues. The Australian Police responded after civil defence was eventually made aware of their plight about 10 days later. North Beach was largely forgotten by civil defence. North Beach does not have any major through roads and has no centre, it is separated from other suburbs by green or recreational spaces and the school is in one corner to the south. Homes were severely damaged with no power, water or sewer but with little liquefaction damage the suburb was not easily seen. Compared to suburbs like Aranui where there had been pre-existing community development programmes in place, North Beach was isolated. Andrea discussed how she fed thousands in those first few days.

Andrea (KI): *Aranui really got together because they had that pre-existing community development stuff beforehand. And I had always hoped that when I would get the welfare centre up that they would continue, but they didn't, and they still haven't. So that community is still as deprived as they were as when I saw the guy washing the dishes in the gutter (visually shuddering) - they are still not very resilient.*

Key informants identified the same well documented suburbs for showing, self-activation and self-management. Lyttelton, Sumner, Southshore, Heathcote Valley are all geographically well

defined. Phillipstown is also geographically well-defined through large arterial roads and like Aranui through social boundaries.

Andrea (KI): *Places like Sumner and Lyttelton got noticed because they are easy to know where they are, they have defined geography.*

Knowing the boundaries of suburbs was described by key informants as helping in many ways. Most referred to the period immediately following the earthquakes where these suburbs were better noticed because of the geographic nature of suburbs. Not only do those suburbs have defined geography but they also are of a manageable size.

Helen KI: *One of my friends is a senior policeman in town, after September he put on his old uniform and knocked on every door in his suburb and he found all these old people and put them together.*

When asked why he did that, he said he could because he knew how far he had to go. He lives in a very geographically bounded suburb of about 300 households. Also, because some suburbs were well-defined it was easy to assess what was required and so they could ask for help because they could spell out the scale of what was required. Bill talked about how being defined made it easier for him to manage a community response to government policy and process during the recovery phase.

Bill (KI): *I could ring and ask for help for my community because I know the area I am asking for....and when people are geographically bound they tend to do things more within their community.*

Localised responses that were manageable were also important because of smaller local scale. Smaller neighbourhood area that are well defined, were more likely to be better self-organised.

Bill (KI): *We are lucky we are a defined area and some of the areas that I think people have struggled are obscure areas their geographic areas where the boundaries are not clear.*

Bill went on to discuss other suburbs across Christchurch identified as places that don't have good communication among residents.

Bill (KI): *Yes, because there are areas that are not well defined like Burwood and Dallington even places like Woolston are not particular well defined, yes, where is Woolston?*

In Phillipstown, the school became the *de facto* community hub where the water trucks were placed for people to access drinking water. The socially isolated and most deprived households in Phillipstown found getting food, water and information was essential through local formal support. Phillipstown experienced little damage compared to surrounding areas but residents still needed the water trucks and to connect with others. Key informants described how residents from Phillipstown and surrounding suburbs gathered at a local church for meals. They spoke of how they needed food, but said they went because they needed connect with others.

Phyllis (Phillipstown): *The school got trucks going there with supplies and with the community centre helping with the school they got trucks going there regularly. And they said ‘come and get supplies and water’ and we did that quite a lot and volunteers came and helped. It was quite interesting time how they came together.*

Lyttelton had many vulnerable people, single men living in boarding houses mostly ex-seamen and elderly people on low incomes. Lyttelton was identified as the easiest suburb to organise among the chaos because of pre-existing lists of vulnerable as well as a community centre that has a strong focus on community. Lyttelton Community House had the ability to provide food and shelter. They also worked with Time Bank of Project Lyttelton,²⁸ which had lists of specific residents’ skills. This interconnectedness has been discussed by researchers as being important to the successful response of Lyttelton, where the vulnerable had better outcomes than other parts of the city (Thornley et al., 2013; 2015).

Organisations within some suburbs also made a difference. Many not part of the formal civil defence, such as the South West Baptist church in Hoon Hay was very involved in the earthquake response across multiple suburbs. The church used its coffee shop in Addington and the Church café in Hoon Hay to feed and organise support. Key informant Alan described how the congregation and local people were offered shelter, food and a place to gather. Companies donated food they were unable to sell or store. The church used this food to feed the local community. They organised locals to offer their spare bedrooms to provide accommodation. Having a socially

²⁸ Project Lyttelton, is a not for profit community based organisation based in Lyttelton, the port suburb of Christchurch. The project includes among its activities a time bank, community garden and farmers market.

orientated community based organisation within Hoon Hay enabled a significant response, provided a base and a central hub for local community in the absence of a council facility or welfare centre. Key informants all recognised the importance of churches and their subsidiaries in the response. Hoon Hay built about at the same time as Shirley with poor delineation and long streets designed for cars, needed this local organisation to support residents. Groups such as religious or community based centres have been found elsewhere to be important anchors in a community (Chamlee-Wright & Storr 2009; Storr & Haeffele-Balch, 2012).

Not all was positive. Lee (in his 30s) listened and contributed to his mother's interview, he chipped in about what he saw during that time in Hoon Hay.

Lee (Hoon Hay) - *When they were giving out the lump sums of money, I watched here and other neighbourhoods in Christchurch the people who needed those loans stay at home and sort out their houses and everyone who didn't need those loans quickly run in to get them, 84 percent of those loans went on 'P' because no one wanted to sleep.*

Lee went on to talk about how some residents took advantage of the support, especially in his part of Hoon Hay.

Lee (Hoon Hay) - *I didn't see much of that at all and so might depend on where you live. I haven't got, so I am going to take, and that is the attitude of most of the people around here and they don't care. I saw it here on the street. I think it is the people who have a lot and people who have little behave mostly like that.*

Lee was not the only one to note that in this more deprived part of Hoon Hay some residents behaved badly, taking advantage of access to food and donated goods. Andrea also discussed how some were going around the different welfare centres in the east of the city and were filling up their pantries or dairy owners filling their shelves. Key informants commented on how the badly behaved were at opposite ends of the deprivation scale, including the wealthier who were described as some of the most demanding and difficult to deal with.

5.4 Resources

Personal, financial and material resources were all important, but what mattered was the availability of these resources that could be shared through social networks. Sumner shared a similar experience to suburbs across the Port Hills where after three to four days a collective response was initiated. Help from the outside, civil defence groups or government agencies took

significantly longer. Access to resources such as object resources whether food or water or tools were crucial to how well residents managed. Social resources through connections and networks underpinned successful adaptation and coping, by providing access to food and tools.

5.4.1 Object or material resources

Alan (KI): *Having sufficient resources is important but knowing who has what too is more so.*

Participants considered the essential ingredient in supporting families and neighbours was having beneficial equipment and know-how, and these were shared. More than half of the participants and most key informants interviewed discussed being able to manage because of their experience camping or tramping. All interviewed spoke of Canterbury people as being resourceful, three referred to New Zealand's number 8 wire mentality.²⁹ The following comments are typical.

Sandra (Phillipstown): *We were alright, we camped in the backyard, and we knew how to build a fire and a long drop.*

Ann (Hoon Hay): *And so we kind of hunkered down with neighbours and between them and us we got what we needed, we had extra this and they had extra that, sharing the resources was important and knowing what we all had and that was our immediate response. When you don't know your neighbours you can't share resources.*

June (Hoon Hay): *We dug a hole out the back with a chair and toilet seat over it, so you had from here (pointing at her neck) down as private so no one could see you. We managed quite well coming from country pioneering stock, you took a shovel and jays fluid.*

Frances (Merivale): *We were lucky as one of Pete's brothers lives out at Yaldhurst and so has his own well and kept us in water, we have a full pantry, camp stove, freezer so we had stuff and it is interesting having stuff and you don't worry when you have food and water. Yes we could manage.*

This having stuff was a common term used. Opawa participants all spoke about the man with water.³⁰

²⁹ Aotearoa /New Zealand cultural lexicon where number 8 wire – standard gauge wire for fencing - represents an ability to create or repair using whatever is available.

³⁰ Christchurch is fortunate in one aspect, although the wetland environment caused much of the land damage through liquefaction, access to the aquifer via springs provided a direct drinkable water supply for many suburbs.

Graham (Opawa): *We could manage with food and water and stuff. None of that worried me, really. Our big issue initially was water and the guy down the road had this spring turn up and he piped it and we walked down and collected water and the whole neighbourhood would go down the road and have a chat and find out what was happening all around.*

For those without adequate resources already in place the post-earthquake period was difficult, especially those who lacked access to transport.

Donnie (Phillipstown): *The earthquake happened on a Tuesday and I did my shopping on a Wednesday, I just didn't have it here and after that of course everything was shut.*

Donnie then went on to talk about her relationship with her next-door neighbour who provided support and food. Other researchers noted having access to resources through neighbourhood was important (Yanicki, 2013). Pip also noted the value of supportive neighbours.

Pip (Opawa): *It was always supportive before, but definitely around the time you had a lot more communication with your neighbours.*

Key informants who door knocked to check on residents within inner city mid to high deprivation suburbs spoke of households not having access to tools. Martin spoke of a small street in Woolston where, not one household had a spade to dig a hole for a long drop toilet. He could direct the local civil defence to provide such resources. Having access to resources, or as described as having stuff, was very central in helping to manage in those first days. Supermarkets, shops and petrol stations were all closed for residents in the east, south and Port Hills. Many were closed for months and years in places making it necessary to travel to the inner northern areas or the west. The supermarket in St Martins was rebuilt and opened in September 2013 and Redcliffs in October 2015 (CDEM Review, 2012).

5.4.2 Social resources

The local government civil defence and volunteer processes started to appear around Friday 25 February onwards. The volunteer relief effort was beginning to emerge about the same time as the welfare structures were set up by civil defence toward the end of that first week. All recognised the logistical difficulty in managing the size of the response required. Key informants also distinguished between the different needs. The formal response was needed in the central city where the emphasis was on saving lives and retrieving bodies under very dangerous conditions.

This meant that it was not possible to focus on providing water and food to suburbs until more relief came into the city.

The whole city was effectively closed. For Christchurch residents, the rhythm of their everyday lives was severely disrupted. Residents still in their homes and with family and friends safe, found themselves with time. Places of employment took weeks or months to be re-established in new buildings outside of the central city, schools and the everyday places were closed for weeks. Libby and Mark understood the need for people to have some certainty and this came through needing to help.

Libby (KI): *People were lost. So when people die it throws us out of ontological order, same with disasters, we don't know how to behave because there is no script for it, I think we all came together because we all scrambled and lost our routines and our order and we needed to come together to get some sort of rhythm and routine to sort out what we needed to do next.*

Mark (KI): *We need to predict things it's about routine – there was no script for how to behave.*

Most interviewed described being lost and needing to do something, as stated by Marnie.

Marnie (KI): *I needed to do something.*

This is consistent with the disaster literature, often referred to as the *heightened altruism* that occurs immediately following a disaster (Dynes, 1994; Kaniasty & Norris, 1995). Key informants said helping others makes people feel empowered, as Ruth said.

Ruth (KI): *One of the best things you can do, when you are traumatised, is to help somebody.*

Participants spoke of the social times clearing the silt and spending time with family and neighbours.

Andy (Opawa): *I knew that my loved ones were ok and the house was still standing, Maslow's hierarchy, once you know you have all those things, you can go off and do the caring thing.*

People helped because, in addition to having time, there was a clear and obvious need. Nearly all spoke of their need to be with others. Part of this being with others was connecting and collectively

helping across their neighbourhoods especially with the cleaning up of silt from liquefaction, as well as helping friends and family move from damaged homes. Organised action also occurred through church or schools who door knocked to check on residents especially the elderly, or provide food and water. Most interviewed volunteered in some way to help, in welfare centres, local activities to keep children occupied or to help dig the silt from local schools and homes across the city, like Sally's family and friend.

Sally (KI): *My husband's eldest son would come over after every earthquake, they lived in Riccarton so were relatively unaffected, and they found themselves needing to help..... I had a friend who came over from the west coast filled his car with water and batteries and said I have five days put me to work. We had to outsource him (laughing).*

All but one interviewed spoke of the latent goodwill dormant or hidden generosity that is moderated in normal everyday life. Disasters accentuate a community in many ways and those interviewed expressed a desire for maintaining the new awareness and understanding or spirit of community. Others said it was cathartic, where strangers often spoke as long-lost friends. They all recognised the challenge of maintaining that goodwill during.

Mark (KI): *The really cool thing was to see how people came out of their shells and supported and helped each other, that was wonderful and great in a time of crisis there is goodness in humanity and that people do the right things when things are going wrong, the vast majority do and they do it their own way.*

Participants and key informants spoke of the art work on damaged walls and buildings across the city and three specifically referred to Figure 5.1. They described feeling saddened when the building was demolished.

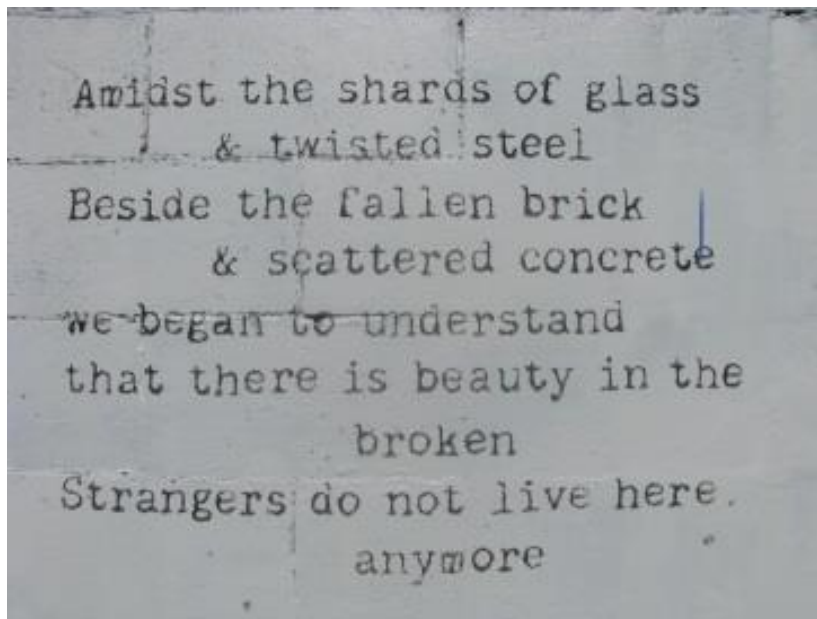


Figure 5.1: Artwork on a building demolished in 2012

Source: Courtesy of Tony Moore

Many participants said that to participate as a member of a group was central to helping to them feel somewhat in control. Some did not have the ability to help, due to the death or injury of family or friends, having to find a new place to live because of damage to their homes, or loss of business. Despite their own difficult situations, they still expressed their guilt for not participating and helping others. Key informant Helen whose house was very badly damaged and was not able to go back into her home said.

Helen (KI): *I was unable to help, I didn't have the ability or energy or desire because we were just looking after ourselves.*

Four participants spoke of not wanting to admit that they had needed aid. Three were adamant that they would never seek help. This was one of the few times interviewees spoke in negative voice, usually about the fact they required help with living expenses and housing following damage to their homes. Two interviewed needed financial and physical support and this was a shock. For some this was the first time they needed government aid and having to ask for support was discomfiting.

Libby (KI): *I found it to be the most humbling experience, I have never been on a benefit but we needed help after February, we had to go and register and then go to the Red Cross and say I need \$1000 I hated it, it was so humbling and I think that is why beneficiaries*

get to the point where they don't care. The worst bit was a volunteer was a mother I knew and even when she sees me now I know she has seen me at my worst.

Participants discussed how their needing to help was inherently linked to their needing to talk. Storytelling has been described as important for helping people to cope and manage. Following a disaster, people need to tell their stories to make sense of the traumatic experience of the event (Carlin & Fuller, 2012). Talking enables those experiencing the disaster to understand and to have a sense of control, gathering with others supported this talking through shared volunteer activities. Chris felt strongly about the connection he had with others.

Chris (Merivale): *My most frequent remark 'wasn't it amazing, weren't they something', I keep telling people that I have lived a fuller life because of the earthquakes they are just remarkable experience to go through that. We all talk to each other and that is more noticeable.*

The places to get water such as the springs or water tankers were early important meeting places. Many spoke of going to the water tankers just to meet others, this was across all suburbs.

Sheila (Phillipstown): *The water truck was where we talked to each other.*

Other places were not so obvious. Hoon Hay residents and key informants from coastal suburbs spoke of the portaloos as meeting places who were without sewerage for months, some for years.

John (Hoon Hay): *We didn't have sewerage for nine months, the street was held together by the portaloos, that was where we met and talked, actually the day the council gave us individual chemical loos was the day there was less interaction on the street, with the portaloos a lot more was shared.*

Two key informants with health backgrounds referred to the internal and casual counselling that went on across the city. Three interviewed valued the side lines of children's sport where parents shared information and stories.

Alan (KI): *Connections are important for people to respond, resources exist, the bits and pieces, spare food and equipment and knowledge, it is the linking up that is important, we don't need that much outside help, we just need to interlace what is there.*

Places were important for this social interaction and attaining information, an important by-product of this was problem solving. The storytelling has been an important part of the healing process and at the same time has opened new pathways to getting to know others locally.

Ginny (Merivale): *Yes, where you turn up and meet someone who you have never met before from Christchurch and you can strike up a conversation about the whole thing, where you were and what was your experience, and also good for healing and you just need to talk it through and get it out. So yes, I think for me and my family a big part of the healing process was talking about it.*

A few participants spoke of their determination to continue this acknowledgement of others near to where they live, like Carole.

Carole (Opawa): *When Bob next door went into the home, we made a point of talking to all the neighbours in a regular basis especially when I walk the dog, once upon a time I would wave but now I deliberately stop and talk to them. And we always talk and now I know more people further down, we stop and talk and chat, and we always ask how they are and make an effort to know how they are.*

The residents of Christchurch are used to telling their stories having years to rehearse their response to “*where were you when it happened*”? Most interviewed discussed how when speaking with people outside of the city this retelling of their story results in a much edited or abridged version. Talking about the earthquakes has offered a shared common narrative. This narrative has helped to provide for an emergent sense of identity and place that comes from the trauma of that time. The shared stories have provided a foundation of support and many interviewed spoke of their need to participate in the storytelling. Sandra and Grant were very clear of their need to tell their stories.

Sandra (Phillipstown): *The storytelling is important and the needing to speak about it and the need to put into context, and I know along the way I will write about it and I want it written for the kid's sake, and I also want to get it out of me.*

Grant (Phillipstown): *Story telling is important and with friends I have done very little public storytelling in regard to the earthquakes but I do it every day in my life, in fact I am doing it today in writing a story for a funeral I am taking tomorrow for the mother of a friend of mine.*

Grant went on to explain why he had put so much effort into community projects.

Grant (Phillipstown): *The needing to down load and share and that is what men's sheds were or women's sewing circles, not to be too gendered about it, but that is what they are all about really 'blah blah' around an activity and doing the activity is an important part of that.*

Phillipstown residents were seen, by Winnie who works in Phillipstown, after the February 2011 earthquake sitting out on the verandas close to the footpath and talking to those walking past sharing their stories and experiences.

Winnie (KI): *I remember walking up and down the street and everyone was sitting out on their verandas talking with their neighbours, some even barbequing, because they walk rather than drive they know each other more.*

This talking was carried over into the work place

Brian (Merivale): *Yes, it was good especially after the big one, half of our meetings were spent talking about it before we got down to business. Yes, we needed to do that and it went on for a long time.*

Like Ann, most discussed how this needing to talk was part of the healing process, a component of their needing to be with others.

Ann (Hoon Hay): *The extraverts who need to talk need to look after the introverts who can't talk, I remember there was a role for the extraverts supporting the introverts.*

She went on to say:

Ann (Hoon Hay): *Well we talked everywhere really like in the line at the supermarket or in line at the library and we shared stuff. And I know a few people who are not like me – I wear my heart on my sleeve and I love sharing but I do know a few people who really hated going out because they knew that people were going to ask questions, and so decided to keep away from the constant questions.*

Only two of all interviewed said they did not need to talk, this not needing to talk was usual for them, but did not stop either participating in the clean-up of their suburb. Both still had a strong desire to be with others.

Tom (Hoon Hay): *I don't know if it was a common topic of conversation, I don't know if I sought it out as we weren't badly affected, and I am not one of those people who needed to talk about it to feel better about it, but then I am not engaged that way.*

Those interviewed spoke directly of not having a sense of control, of feeling disempowered, of not knowing. And there were tensions between people who needed information, and others who did not. For some knowing everything they could about the earthquakes gave them strength, others did not want to know. A few participants were very clear of the need to be honest about not knowing what was going to happen.

June (Hoon Hay): *We didn't have control, we need to be fronting up about it, don't tell kids that you have control when you don't, because there was no control so prepare your children for it.*

Those who didn't feel the need to be in control felt it was a positive experience.

Margie (Opawa): *A few others have said how much they miss them, and I am in that boat too and it is probably cortisol and having to come down off the hormones. Yes, we are all junked up on it, yes it is exciting I suppose an amazing that you can see the world move like that.*

Many also expressed the difficulties they had following the earthquakes. The lack of ability to maintain or have control caused some personal psychological struggles; one participant spoke of not showering for weeks as she was too afraid to take off her clothes. For many, the struggle with the earthquakes was not being able to tell when the next one was coming.

Shelby (KI): *The ground has been the only constant in my life and I realised that the earthquake gave a whole new meaning for me.*

For those who had left Christchurch it many found it hard to talk with others.

Debs (Hoon Hay): *They (her parents) moved to Timaru, so when she tried to talk to her friends about it they had no inkling about it, and it quickly got old for them and so she was careful when she went anywhere whereas I never went anywhere so I was able to talk to everyone.*

Gathering places have been a necessary mechanism for sharing information and communicating ways of how to manage across neighbourhoods and workplaces.

5.5 Places to meet, talk and organise

Strong neighbourhood leadership was often found in those suburbs where there were community meeting places, a school, a pub, or a park. A place was needed where people could connect and together initiate a project or a response. It was important to have key people who led and who had skills, whether to organise or more practical skills, but equally important were the places to meet, to facilitate this coming together. People came together in small places as well as large, a seat or information board, a community centre or gathering place that were centrally or obviously located.

5.5.1 A community hub

Three key informants, who organised door knocking across suburbs to check on the vulnerable after the earthquakes, provided many examples of suburbs or larger neighbourhoods without a hub or centre and where residents waited for help. Most recognised the role of meeting places in the immediate aftermath that continued well into recovery. Some interviewed used the term ‘bumping places’. Lyttelton Community House for example had the ability to provide food and shelter and working with the Time bank of Project Lyttelton organised the exchange of skills. This interconnectedness has been discussed by many as being important to the successful response of Lyttelton (Thornley et al., 2013; 2015), where the vulnerable had better outcomes than other parts of the city.

Schools across the city were significant hubs for resources and to meet with others. Schools were the gathering places for comfort and information. Two contrasting examples are in the south of the city. One independent school with a citywide catchment used funds donated from across the country to help internally school focussed activities. St Martin’s primary school in the next-door suburb opened their doors to all residents with shared food and activities. Three key informants discussed this open invitation to residents, everyone brought what they could with the school hosting the coming together. The geographic sense of community was noted by Sally.

Sally (KI): *This getting together has changed that school to looking more outward and what distinguishes it from Steiner...St Martins was very open, I remember it was a very different response, it was very geographical and the school was open to everybody in the community.*

Steiner having a city catchment perhaps were unaware of their sense of being part of the local community, their school was their community. One participant actively moved her child from this school in response to the different way of focusing on community. Heathcote Valley residents

said their primary school showed similar leadership supporting the whole community. All residents were invited to the school for post-earthquake activities. This was equally important for those without children or whose children had long left the school community. Phillipstown School was the place to get water and acted as an important meeting place in the absence of another hub. Key informants also discussed how primary schools as civil defence meeting places sometimes did not fulfil this role. Two informants from the east talked about the civil defence signs on North Beach and Avondale local primary school gates, both remained locked. Local civil defence could not enter the properties.

Andrea (KI): *Wasn't it Aranui that had all the washing machines and a generator, well how cool was that, whereas North New Brighton and Avondale schools their gates were locked and no one was there.*

Nearly all interviewed were unsolicited in discussing the lack of or closed leadership from Council. A common statement was, *"I don't think there was much leadership shown actually."* Although most recognised cordon enclosing the city centre was problematic, leaving all to feel estranged from the fabric of the city and decision making. Key informants were angered by the slowness of council staff to check public buildings and declare them safe, citing schools and council facilities that could have been used early as places to gather, many school buildings are light and easily adaptable.

Winnie (KI): *They are not thinking that communities are made of grown-ups and can manage for themselves; they needed to check these places so communities can gather here, so again they are not thinking about the village concept.*

Key informants stated an important task was to go and check on community facilities to ensure their usability as centres, welfare and community gathering places. One spoke of a centre not opened because it required something as simple and easily remedied as a new light switch.

5.5.2 Hubs for information and communication

Communication was critical because, without electricity, it is not possible to know what was happening and the lack of information left people feeling disempowered. Participants understood they were not able to do anything about the earthquakes, but with information they could make decisions about what to do next. And that would help regain some control of their lives around home and work. Communicating information took on different forms. Initially, in the immediate aftermath it was centred on where to find food and water or portaloos. This was layered with not

knowing about damage to homes or their employment status or place and the continuing need to source the necessities, food and fuel etc. from the few supermarkets and petrol stations that were open.

Dion Swiggs started the Rebuild Christchurch Facebook page³¹ after 4 September 2010 when he realised people needed information. At the time information was ad hoc and had been difficult to follow. Following February, the website became the place to go for those with electricity who then communicated through to family and friends who did not. Again, after each large earthquake sequence, residents required information about where businesses had moved to, road and building closures and council information. Swiggs drew it all together and has had well over one million hits. Obtaining information was generally more difficult in those neighbourhoods without a central hub or recognised local place. Three key informants were clear that an important role for them was of communication.

Andrea (KI): *And it did peeve me off a bit because it (referring to civil defence) didn't get the right messages out, so many bad messages went out like 'if you need assistance go to www.redcross' etc. How do you know that if you haven't got electricity, they stuck these on power poles or ring 0800 or go to www, but how do you do that?*

The CDEM Review (2012) highlighted the poor localised information for the suburbs that were badly affected and where electricity was disrupted. Like many key informants, Ruth kept moving across the suburbs to check on lists of the vulnerable, ensuring water and food was available and that welfare centres were equitable in their distribution. One important task Ruth spoke about was to take civil defence information briefings to these centres. Council information sessions were said to be good, until CERA took over organising the civil defence meetings, when information was said to be lacking. Residents who had left their homes missed these sessions and then they stopped. This then left an information vacuum.

Ruth (KI): *So when we specifically talk about the quakes, I am the local Member of Parliament and I see my primary role is to provide information because there has been an information void from day one. I suppose this is more relevant now as time has gone on is that information has started to become available.*

More than half of all interviewed spontaneously remarked on the role of the local newspaper *The Press*. It was one source where many received essential information. Participants spoke of their

³¹ <https://www.facebook.com/rebuildchristchurch/>

astonishment that the newspaper managed to be published and delivered the day following the February earthquake. Participants still purchased the newspaper at the time of the interview, some said they did this as a thank you for their efforts through February and the rest of that year. Participants commented that they finally saw footage of that day a year later at the anniversary of the quake. This was the first time they had seen the breadth of devastation. Others relied on people outside of Christchurch for information and some like Frances were prepared.

Frances (Hoon Hay): *We had an old phone attached to the wall and we always had that for that very reason and we could talk to family in the UK, and I do remember the radio because we did have the full radio kit.*

Both key informants and participants described their disappointment that council kept closed what they described were essential information hubs. Council used service centres and libraries as staff offices during 2010 and then through much of 2011, until such time staff could re-enter their main building in the central city. The loss of the libraries was felt strongly by those who used them; Lucy spoke about being at South Library when it reopened after the first earthquake sequence.

Lucy (KI): *You know they shut them down after September, and everyone came to the door looking for information, I remember when they reopened South Library, I went around there on a Sunday afternoon and it was packed and people were inside stroking the books, it was quite lovely, quite beautiful really.*

Places to get information became valuable to how people managed. This was intrinsically linked to the previous section about people needing to talk.

Pip (Opawa): *I got so much information just getting water and food.*

Libby (KI): *The other community that was really good was the community where you got your water, when you went to the supermarket I found in the first couple of days I got so much from information while getting water, so much connection and so much value out of Maslow's hierarchy, just getting the water and the food.*

Participants also acknowledged some desired and even required access to information while other members of their families or friends did not. Having information comforted them while knowing it was distressful for others and felt it was difficult to reconcile these differing needs.

June (Hoon Hay): *I have found logging onto Geonet settled me, my husband was angry about me doing that, but it made me feel comforted.*

Information needs changed over time. Participants who had damaged homes in Opawa and key informants in coastal or hill areas discussed feeling powerless and isolated from their neighbours because everyone had a different problem. They also felt isolated from agencies that would normally aid them. And because everyone was asking for specific help, the communication from agencies sounded inadequate. Bill a communication officer noticed the lack of adequate information because of the very specific needs.

Bill (KI): *Everyone was asking for help and the information they were getting they couldn't understand it, because it was gobbledegook or for a general audience or for others with different problems.*

Having information is empowering for people, even if the news were bad about rezoning or land damage. Much of this was instigated informally by residents or community leaders and not by civil defence. Key informants noted that residents would have been in a better position had the different options been put on the table and that because of the sea of information provided many did not understand the information given to them. This was especially true about the zoning of land, which caused stress. How this information was presented was also very sporadic. A clear lesson here was of the importance of good communication for the community.

As time went on other issues emerged around insurance, employment and housing. The different needs within the community made it difficult to source information that was relevant to them. Andrea was clear that communication needs flowed both ways.

Andrea (KI): *To me, resilience means connectedness and information, being able to know what is happening both ways so the community knows what is happening and the organisations that are charged with x y z know what is happening, so there is a two-way flow of information on what is happening.*

5.6 Broader societal findings

This section highlights the broader societal findings in relation to social connection, leadership and structures of society. How individuals emerged out of communities to provide direction and enable the collective effort; they took the lead that then enabled others to help. Leadership was one of the earliest and strongest themes from all interviews including the initial first informal interviews. Leadership occurred across different levels. At the household level, what each household did at home among their family and friends and neighbours, at the neighbourhood or suburban level and city-wide. Libby noted that leaders were trusted.

Libby (KI): *It's like whānau, you know, like each other and that's how communities did well because it is about leadership, trust is important and not being a sergeant major.*

The degree of social interaction and connectedness, that was there prior to the February 2011 earthquake helped provide the foundation. People could draw on good existing social capital that could be used when needed. Participants discussed how the September 2010 earthquake had also broken down some pre-existing barriers and increased connectedness that was then able to be drawn for the February sequence.

Sooze (KI): *Immediately after the quakes, leadership lay with everyone as people took ownership of their own lives and immediately made themselves safe.*

Very well reported in the media was the Student Volunteer Army. With the University of Canterbury closed, about 2500 students connected through social media and assembled to remove liquefaction silt from around homes, roads and public spaces. Similarly, the Farmy Army created by Federated Farmers used diggers and farm equipment to remove silt. The students and farmers were initially turned away by civil defence because with their top down management structures they were unable to deal with the volume of requests to help (CDEM Review, 2012). These organisations then initiated their own response activities. This was done at this large group scale as reported here by Alan.

Alan (KI): *I was on Blenheim Road on the Saturday morning after the earthquake, when a whole lot of farmers came in with trucks and tractors it was superb, so motivational and practical and it was very important.*

Simon observed that support also arrived at the individual level. The Rangiora express was run by a woman who knew how to cook and who knew someone with a helicopter. They flew meals into welfare centres in the city.

Simon (KI): *The ability to furnish a welfare centre in 4 hours with 200 lots of bedding, that is community, from Rangiora express to the resource from within the community to ferry food and water in.*

Local churches and pre-existing formal organisations, including the regional and local council civil defence team welfare centres were important early. Aranui Primary School, for example, was set up as a distribution centre for food and provisions for around 3000 people after a few days, it was well organised by the end of the first week (Yanicki, 2013). ACTIS, the Aranui Community

Trust, an independent not for profit organisation,³² also managed the Heartland Services (education, housing and Police) bringing extensive relationships with central and local government, but also with local providers. Support of food and necessities arrived from outside of Christchurch and from all over country (Yanicki, 2013).

The South West Baptist Church in Hoon Hay, as discussed, provided support in many ways. Using their local community groups in different areas, they could bring people together to look after residents locally. This decentralisation was described as important for local responses. After checking on residents in their homes, the church then set up teams to remove liquefaction silt from homes, streets and natural areas. Without this church effort, parts of the southern edge of the city would not have had early post-earthquake support. The Grace Vineyard Church in New Brighton provided similar support for the New Brighton area (Thornley et al., 2013). Key informants also spoke of St Chads in the inner east, St Anne's in the north and the City Mission.

5.6.1 Leadership and marae

Less reported at the time, but now featured in research literature and a good example of strong positive leadership was the early opening and activation of well-established structures such as marae or tribal meeting places as welfare centres (Kenney et al., 2015; Phibbs & Kenny, 2015; Lambert et al., 2012). Marae are skilled in housing and feeding large groups of people within days usually for tangi (funerals) or cultural events.

Peter (KI): *For many Māori, they have the marae and this is a place to come home to and is totally different for them.*

Two key informants, who worked for the Environment Canterbury, had strong relationships with marae. They were having lunch when the earthquake hit. After waiting for the shaking to stop, they looked at each other when one said (they can't remember which) 'we had better get going then' so together they walked directly to Rehua Marae to set it up as a welfare centre.

Bob (KI): *We started organising because it had to be done. It was spontaneous really, we stepped up because we could.*

Peter (KI): *It is about responsibility, I am from 48 to 50 generations of occupation in various forms and with that whakapapa comes responsibility, over home I have certain roles that I have taken up that I am responsible for and as an elder I am responsible for.*

³² Originally set up by the City Council and Housing New Zealand to address the needs of the people of Aranui.

Ngā Hau e Whā³³ marae like Rehua marae was opened as welfare centres for all Māori and local communities across the city. Urban Māori make up 7.3 percent (StatsNZ, 2013) of the greater Christchurch urban population and more than half originate from North Island iwi. Rehua Marae had been checked and stabilised following the September 2010 earthquake sequence, therefore, was able to be opened within eight hours as a welfare and coordination centre. Both key informants discussed the meeting the following day on 23 February where the Rehua was assigned as an Earthquake Recovery Assistance Centre. Here it was agreed that assistance would be led by Te Rūnanga o Ngāi Tahu (TRoNT) (Kenney et al., 2015). Marae across the South Island, but principally these within and close to Christchurch opened as shelters. Peter was very clear that Māori are well prepared to support many and this comes from cultural practice.

Peter (KI): *Māori are probably the most able and prepared without being prepared because of manaaki³⁴ and whanaungatanga³⁵ are all in our make-up and what we build we put in place to receive in good times and in bad.*

Both key informants described how the marae provided food and shelter. Civil defence took time to recognise the importance of the marae as welfare centres. Local residents did not realise the marae is open to all, as Bob explained.

Bob (KI): *You see the marae is not just for us, it is for all the neighbours too, it is for the whole community.*

Both key informants spoke of kaupapa,³⁶ their cultural obligation to support local communities. The interviews were very positive with both speaking of the intrinsic support that was provided by Ngāi Tahu. This has affirmed iwi, reinforcing their sense of *their* place and identity among the city community. Others also described this affirmation (Phibbs et al., 2015). The marae hosted Māori wardens from around New Zealand who door knocked to help households and removed silt across the eastern suburbs. As well as the physical contributions, wardens played a vital role supporting the emotionally traumatised. Food was delivered and services provided to an average of 4800 people a week until the end of April 2011 (Te Puni Kōkiri, 2011). Ngāi Tahu also had deep bridging and linking capital through TRoNT to government at all levels; local, regional and central government. Marae are a well-established community with strong social connections that

³³ Means the four winds, and is symbolic as a meeting place for peoples from everywhere.

³⁴ Maanaki – look after, show respect and kindness to

³⁵ Whānaungatanga – kinship, relationship, sense of family connection, shared experiences and working together that provides a sense of belonging.

³⁶ Kaupapa – a plan, a policy or a purpose

utilise all forms of social capital well. Bob observed that greater connection was needed with civil defence.

Bob (KI): *We have learnt now that you have to be prepared, you don't have to teach Māori to run a marae, they know how to do that, what you need is to teach them to work with other organisations around them.*

Peter smiled broadly as he spoke of the strength of Ngāi Tahu involvement and community leadership.

Peter (KI): *Ngāi Tahu have emerged well from this episode, they targeted the unpopular areas...Aranui and Wainoni with their high Māori populations, they know they have the ability to work well in an environment similar to Rūaumoko's³⁷ 22 February.*

5.6.2 General community leadership

Community leadership was a significant theme throughout all interviews. All key informants discussed how local leadership was obvious in those suburbs that showed collective action. Key informants recognised that some individuals are trained to take a lead or do so as part of their employment such as local councillors or school principals. But as Alan noted leadership came from within the community too.

Alan (KI): *Leadership didn't necessarily lie in titles.*

Those who are trained and enabled to lead or take control differed from individuals who emerged from within the community as leaders out the confusion following the earthquakes. Four key informants expressed their surprise as they took on leadership roles and helped to set up new ways of working together. Key informants also commented on the importance to have community buy in to lead, to mobilise people and focus on an issue.

Chrissie (KI): *New leadership emerged as new people wanted to do things for the community, whether they had less damage or were better off, people didn't want to sit around and twiddle their thumbs.*

Community leaders were people who saw a need and did something to fix it. Ruth went on to highlight examples of how people rose out of the community as leaders and that leadership was not about waiting for permission.

³⁷ Rūaumoko – atua or ancestor of earthquakes and volcanos

Ruth (KI): *Sometimes it was blindingly obvious who were the community leaders, the people who just got things up and running, a hall for shelter and disseminating information, everyone knew to go there.*

Many could bring their everyday skills to good use, Carole recognised this individual leadership.

Carole (Opawa): *I know of communities like Rapaki³⁸ who had Rebecca who got a community newsletter going, who has that skill and they got something posted up every day so you would gather to read it – it needed an individual to take over and be a leader in a crisis.*

Those who exhibited leadership were often well embedded where they lived. Key informants provided direction on who I should interview, especially residents who shown strong leadership. It soon became apparent that many were women, in the less damaged as well as badly affected suburbs. Often the direction was “you should speak to X, she organised”. There were many references to she.

Winnie (KI): *What I have seen is many women have stepped up who are taking local leading roles, some of that is probably because they are more in their local communities taking the kids to school and taking sports teams and maybe not working full-time. All the normal hierarchies are broken down but don't worry the blokes will get back into control pretty damn quickly (laughing).*

Four women identified who led community responses and projects, agreed to be interviewed. They spoke of their need to be involved in their community, all four saw the earthquakes as an opportunity for change, and all had a strong sense of needing to help others. These women also had good connections across a range of organisations, but especially through local primary school, childcare or sporting activities. They had good knowledge of who had what skills and resources within their local area. Two of these women had experience with local businesses or community projects. Sooze, having spent time in Cambodia, discussed how anyone having travelled in developing countries see happy people living in strong communities. About a month after the February 2011 earthquake, she helped lead a group of residents to set up the Heathcote Village Project. The focus was very much on relationships and building connections.

³⁸ Rapaki in this instance is not a reference to the township in Lyttelton Harbour but Rapaki Track, a road that runs up into the Port Hills behind Opawa.

Sooze (KI): *I just had this sense of this is a wonderful opportunity to come together and support each other and do stuff together, what an opportunity.*

Using information from Project Lyttelton, Sooze with others organised a get together of all their networks, school, the community garden, family and friends. One within the network put a sign on a lamppost advertising the meeting, 35 people turned up, and then 60 in the following meeting. The focus was on relationships. John was very clear where leadership lay in his neighbourhood.

John (Hoon Hay): *In our street, leadership lay with Mary, she collected up this guy in our street who didn't have good English and was on his own so probably felt a bit isolated.*

John went on to discuss how Mary had been living in the street all her married life and knew people well, she went door to door to check on neighbours and to put people together. He said she knew many people and did not feel intimidated to do this. John like, Donnie, Libby and Ruth noted that it was the doers who made the difference.

Donnie (Phillipstown): *Mostly it has to friends and people you knew, up and down the street, for me a lot of it was tied up with A, she is a doer, I am too but I am 60 this year so I am a bit less of a doer than I used to be.*

Libby (KI): *Some people are just doers, it's a bit like that adage of give a busy person the task for it to get done.*

Ruth (KI): *It is all about an attitude...one of the Heathcote Project people offered to help contact Council, and she was the one with a badly damaged house, and had quite a bit on herself.*

Others described symbolic leadership. Three interviewed spoke of their local ministers who would not normally wear a dog collar, but did so all through the response phase so residents would know who to turn to. An informal interviewee said after the September earthquake her neighbour wore his police uniform to make residents feel at ease. Uniforms made people feel comforted and as Lucy noted helped to petition the mandate to act.

Lucy (KI): *So if I have some symbolic uniform to put on, then together if that happens then I can, but if I am completely disconnected then I can't claim a mandate because it looks a bit mad, because authority is not something that you can claim it is given, it is a two way process.*

5.6.3 Community / residents' associations

Another common theme was the beneficial or alternatively poor response of local community associations. Ruth, who worked across her Port Hills electorate, organised community meetings to help provide information for residents. She noted that many community or resident associations showed little community leadership, especially those identified as “grizzly” for their absence or passive behaviour in waiting for help. Sally also referred to community associations that spent their time complaining were the ones not able to manage after.

Sally (KI): *Hmm like those residents' associations that react and are antagonistic in a written way.*

Many residents' associations did not provide for a community forum during the immediate response time or later into recovery and many went into recess or ceased to exist after the earthquakes. Ruth like other key informants discussed needing to break the barriers between some community groups, especially the more formal groups or community associations.

Ruth (KI): *I think that community response should be driven by what people actually want in a community, we do have too many residents' associations that meet in a formal structure and don't look outside the room. The ones that operate better are the ones that ask what is going on, it is easier to see what needs to be done post-quake possibly. The good ones are there to support the community rather than just read the minutes of the last meeting and look at matter or whinge on matters they focus on.*

Key informants were surprised about how poorly connected some community association membership had been to the general community for whom they were purportedly the community voice. Sumner was identified by three key informants as not being supportive. Resident association members were said to have left Sumner retreating to their baches³⁹ outside of Christchurch.

In damaged suburbs, new groups transformed or emerged to replace residents' associations. The aim was described to be more inclusive to meet the new needs. Heathcote Valley and Sumner new groups brought a change in style that was more inclusive, flexible and with less of the 'by the book' mentality. Learning from Project Lyttelton, both have become project orientated. The Heathcote Project works to ensure their meetings are community events and are open about what is happening in the community and reporting back. Marnie from Sumner described an increase in

³⁹ Holiday house.

local community involvement that brought a different version of resident association. She spoke of the need for change. After February 2011, a newly elected membership had a stronger focus on supporting the community including setting up a Sumner community activities and website.

The Southshore Residents' Association had large issues to deal with such as loss of infrastructure, red zoned homes, as well as ongoing flooding issues. After the February earthquakes, the residents' association struggled to find a role and for about 6 to 8 months was not able to make progress. The association re-emerged with new skilled leadership that enabled a representative group to liaise with council. Having a history, even though the association struggled, was described as important.

Bill (KI): *I think that helped and because we have a long history of a residents' association we realised what that meant it felt it gave us authority and standing so we had no compunction in ringing up the mayor – Leanne we need this and that.*

Southshore also showed strong linking capital and leadership, where Bill could use his knowledge and skills to support the local community. It was difficult for this badly damaged suburb where water, power or sewerage was not available for months. Power was provided by generators at the end of a street but these would often break down. Bill used his knowledge and skills as well as his connections within organisations to support his community.

Bill (KI): *I was able to bring what I was doing for the national civil defence and then it just seemed to flow from there.*

All recognised that having a local group to support the community is vital. Andrea, who provided welfare in her suburb, has now stepped into a formal community board role and is keen to work to strengthen residents' associations. Andrea set up meetings with active residents' groups to provide an opportunity to discuss what they were struggling with. She specifically discussed her frustration in attempting to understand what made parts of North New Brighton or North Beach less resilient than close suburbs such as New Brighton, Southshore and Aranui. Andrea questioned if the suburb's lack of a centre or some place to meet was the reason for the difficulty in bringing the community together.

5.7 Bureaucracy

Officialdom, bureaucracies and government processes were all seen to be a problem by many interviewed. This was often framed as being slow to move out of a business as usual mode and to

not adapt well to the changing circumstances. Quarantelli (1998) pointed out that bureaucracy is not good at the urgent needs of disasters because organisations do not improvise quickly or well and sometimes priorities are at odds with residents' immediate needs. There were many examples of this. First and foremost, the February earthquakes were beyond the capacity of civil defence. Civil defence functioned solely within the command and control approach and appeared to assume residents would wait until help arrived. The Civil Defence Emergency Management (CDEM) Review (2012) reflected on the response. CDEM noted issues associated with the merging of the City Council emergency operation group within the CDEM group. This resulted in a lack of capacity to deal with informal or unofficial networks to provide local support. The civil defence management structure did not recognise the community's desire to help, whether organisations, local groups or skilled individuals. Two key informants explained how pre-earthquake they for years had been part of civil defence for Canterbury local government, specifically focusing on how to manage after a large earthquake for greater Christchurch. Because this was a national emergency, local civil defence pre-earthquake planning became lost under the national response.

Many were turned away by civil defence, as management structures were not able to deal with the volume of requests to help (Carlton & Mills, 2017; Lambert et al., 2012). National Civil Defence were unfamiliar with the use of marae and whānau support and this resulted in a slowness to recognise the potential of the marae locally elsewhere in New Zealand marae may be well integrated into civil defence processes. The two key informants emphasised that it took formal structures, including civil defence, three to four weeks to recognise both city marae as hubs. Both were involved in civil defence at the local level and were aware of local capacity. In fact, civil defence overlooked the capacity of Māori from different stand points. Phibbs et al., (2015) wrote that the Māori Recovery Network⁴⁰ provided accommodation, food and support for more than 20,000 households even though it struggled to participate within the formal emergency organisations. There was poor integration of the Māori response with the formal civil defence processes, especially around coordination of effort within the East. Māori organisations tried to work with civil defence but found it difficult for the first weeks as civil defence struggled to accommodate the marae within the formal structure. All key informants referred to the inability of civil defence to know how to use the skills of others. Alan phrased this in terms of bureaucracy 'taking time'.

⁴⁰ Māori Recovery Network is a Ngāi Tahu led collaboration set up between iwi and Māori organisations in Christchurch and across the country to support the people of Christchurch following the earthquakes.

Alan (KI): *Leadership lay at the grassroots because people were more of the response... big systems take time to turn the ship, and by the time the ship has turned people have done what they need to do.*

Phibbs et al., (2015) also discusses how Māori wardens experienced resistance with civil defence and police attempting to restrict their participation. There was a level of anger attributed to not being able to utilise Māori wardens fully early on. Throughout the interviews, this was the experience of others. Half interviewed spoke of their children, close family or friends returning or coming from within New Zealand or Australia to help. Those who sought direction from civil defence without success joined the spontaneous localised organised volunteer effort or the student army. The son of an Opawa participant, a structural engineer, was turned away having been told there was no place for him on a civil defence programme. Carole spoke of her son, a surveyor, who was prepared to do anything to help.

Carole (Opawa): *My son and his wife got on a plane and came back, and he is a surveyor he would have been helpful and he couldn't find anyone who would let him help, they closed ranks as no one could be a volunteer. Nobody would make a decision - here was Rowan twiddling his thumbs and he was so desperate to help.*

The Farmy Army and the Student Volunteer Army were equally told they were not required by civil defence. Both ignored that instruction continuing to work within damaged communities. The Farmy Army used their established structures and the Student Volunteer Army used social media as the tool to enable collective action (Carlton & Mills, 2017).

Five key informants also discussed the poor response from central government agencies. Simon was the clearest.

Simon (KI): *In the last four years, no central government agency when I was in the role of recovery manager, came to me and said 'hi Simon how can we help you? So what resources do you need, what could we do to enhance your capability and capacity of your team to help'? They were focused on CERA and their own programmes and their own issues and that is understandable to a degree. It's not that they are against you, but it is a function that they are for themselves.*

Researcher: *Do you think that this is a function of bureaucracy or a function of politics?*

Simon (KI): *It was a combination of the two, there was some understandable bureaucratic behaviours as described by Max Weber bureaucratisation. When you get pressure, you go to the safe ground and the safe ground is internal. Certainly, the seriousness and scale required a major response and the huge transferral of central government resources funding into the region but it was organised very centrally around a very strong accountability. 'I am the minister and I am accountable for this and so I want to be involved in everything' so those sorts of behaviours tended to be hard wired in and so we got what we got.*

Others in education and health also found it difficult dealing with officers of central government agencies outside of Christchurch. Many interviewed spoke of the lack of understanding of how difficult the circumstances were for many residents and that this became worse over time. They referred to the assumption that all was back to normal once the media had shifted focus elsewhere.

With this lack of understanding of bureaucracy, all key informants and some participants spoke of the need to break the rules in dealing with bureaucracy. A common theme, in the key informant accounts, was the need to act and to take responsibility. One participant laughed as he said to me 'bugger them we just had to do it'. Lyttelton because of the pre-existing connections and with a well-defined catchment for services, the community knew they could help the vulnerable that lived there. Ruth refers here the Medical Centre in Lyttelton.

Ruth (KI): *They didn't give a toss about the Privacy Act because looking after people was more important so the doctors gave the Community House a list of vulnerable people and they made sure they had food and water.*

Because central government departments caused headaches, many did not wait for Ministerial or local government directives about what to do. Cashmere High School experienced significant liquefaction leaving tonnes of silt to be removed from the school grounds. Like many public places the school had been built on reclaimed wetland making it prone to liquefaction. The school principal encouraged the school and local community to be involved in a clean-up day to remove the silt from the school grounds, followed by a community BBQ. The Ministry for Education put a stop to further community action under the banner of health and safety. Another high school, with similar issues was then severely censured by the Ministry for not acting, even though they had followed Ministerial directives to wait. Mark worked hard for his school community, recognising that normal processes did not apply.

Mark (KI): *And you notice even with my experiences with the Ministry of Education, those large bureaucracies are not designed for emergency scenarios, they are designed for maintaining the status quo and the normality of things...because in a crisis those organisations are actually an impediment to getting things done and re-establishing order...leadership ends up being bold enough to stay at the school and do what you think is right and reorganise and re-establish your community rather than adhering to the bureaucratic instructions.*

Researcher: *Is this where people are stepping up because there is a vacuum?*

Mark (KI): *See, the rules don't apply anymore. And we don't have to seek permission as some people are more inclined to have that personality type in moments like these they can be useful, when as long as what they are doing is positive and constructive.*

5.8 Discussion and reflections

As described in the introductory paragraphs to this chapter, the results reflect earlier research on the Canterbury earthquakes (Thornley et al., 2013; 2015; Wilson, 2013; Yanicki, 2013) and the international literature (Bach et al., 2010; Aldrich, 2012; Carpenter, 2013; Aldrich & Kyota, 2017). This literature describes that pre-existing social connectedness was essential for supporting and enabling residents to respond following a disaster. With the vast devastation following the 22 February earthquakes, the formal civil defence and welfare structures could not cover all that was required to support the broader community. Residents, who could help to self-organise and act collectively did so through their social or organisational connections. These connections were in place prior to the disaster. Tierney (2014) identifies this resourcefulness gained from collective action as a central component of resilience. Resourcefulness here also meant breaking rules and acting beyond everyday institutional arrangements and bureaucratic processes.

Like Murphy (2007), this study revealed the vulnerable were those who lacked access to resources, did not have community leaders and did not have the knowledge, skills or resources needed to manage. Community vulnerability includes those individual differences described above, but also the cumulative interactions among social, political, and economic and community development. Some individuals across all suburbs could not cope and needed support and this was seen in deprived through to the most affluent neighbourhoods. Many interviewed described vulnerabilities at an individual level, where people who could not manage and had low individual resilience.

Often these were described as needing to be in control and who did not manage with the new-found situation, these people relied on the strengths or direction of others including neighbours.

The earthquake time was in effect a conflation of everyday interactions within local neighbourhoods. Contact, either formal or informal, with neighbours was the essential ingredient. This proximity meant residents could check and provide support for family, friends and neighbours and was also found to be important elsewhere (Klinenberg, 1999; Bolin & Stanford, 1998; Solnit, 2009; Aldrich, 2012). Strong neighbourhood responses were driven by the three forms of social capital: bonding, bridging and linking (Aldrich, 2012). Key informants and participants plainly discussed aspects of their neighbourhood's action that can be described as bonding and bridging social capital. Connections and networks helped selected neighbourhoods to be collectively more resilient and reduce vulnerability. Being well connected locally within the immediate neighbourhood was the foundation. Those areas that could be described as resilient had residents with strong ties within their neighbourhoods through schools, local community groups or business and these were concentrated locally. But knowing others who were well connected and or who had access to resources and the decision makers was also vital. Large scale social networks have been found elsewhere to be valuable for information and connections (Wellman & Berkowitz, 1981). Linking capital meant individuals or groups could call for assistance from formal structures. This research confirms that establishing and maintaining strong local networks was essential, but also that redundant connections could be re-established when needed. Having strong internal and external networks was a recurring theme throughout all interviews.

The most deprived areas, because of pre-existing community development programmes were targeted for immediate support, including by Māori wardens. These suburbs were also used to managing through difficult times and did so and their connections and networks. They also helped the potentially vulnerable; those who were alone or who had few resources. Many would expect vulnerability especially in low decile suburbs such as Phillipstown. Phillipstown residents are used to living more on the street and so knew each other they were socially connected through their poor circumstances. This connectedness helped them after the earthquakes. Residents here showed high capacity to mobilise among neighbours as well across the suburb residents were well supported and informed immediately after February 2011. Phillipstown internal connections had been bolstered by their community hub, where pre-existing community development processes and community policing participated in the post disaster period. This continued post-earthquake and was further strengthened through fighting the Ministry of Education closing the primary

school and is discussed in the next chapter. Even so, residents of higher density housing in Phillipstown were observed to leave for other parts of the city. The difference in social connection between low density and medium density living in suburbs such as Phillipstown requires further analysis.

There were also divergent or contradictory observations from all sources about responses within suburbs. Hoon Hay, for example, showed strong collective action and support associated with church groups. Other parts of the suburb floundered. Researchers studying Aranui observed positive responses, while two of my participants working with Māori wardens noted there was less organisation in that suburb as others described (Thornley et al., 2013, 2015; Yanicki, 2013).

This study was primarily directed toward identifying strengths rather than the vulnerability of communities, where specific attributes and elements determined the effective response. These have been observed following other disasters and include leadership, adaptability, direction and communication (Bhandari, 2014). All four were found in this research but I would add two more to the list. The first relates to resources, especially object (material), and social and energy resources contributing to social capital and community competency. These two were identified as important by Norris et al., (2008). The second is the contribution provided by the built environment, where neighbourhood through specific features such as a centre provide the physical place to gather and organise. These places also contribute to the pre-existing social connections described earlier. The next sections discuss these in more depth.

5.8.1 Resources

Having access to resources was such an important element following the earthquake devastation. The concept of a loss of resources is central to stress theory of conservation of resources (Hobfoll, 1989; Hobfoll et al., 2007). In a disaster situation, resources can be lost, are threatened or difficult to obtain. Object resources such as housing, food, fuel and tools were intrinsic to how well residents managed. The access by individuals and organisations to resources was gained through social connections. This has been observed elsewhere (Kawachi, 2010). Resources sourced through social networks, through individuals and households can also be sourced at scales that extend beyond the boundaries of neighbourhood, to city and even nations (Hobfoll et al., 2007).

Following the earthquakes, object resources came from across the country; food, tools and people to help. The distribution of these resources across the different neighbourhoods was variable. As outlined by Bernard et al., (2007) it was not so much about having resources per se but how those resources were distributed. And this distribution is shaped by the social interaction among

residents and the other neighbourhood users, businesses, property owners and local government. A lack of access to simple resources such as a spade to dig a long drop toilet was noted by many key informants as to why some streets or neighbourhoods could not manage. Residents were observed to leave suburbs and Christchurch as result of a lack of ability to cope because of the lack of food or equipment.

Social resources were combined with energy resources provided companionship, mutual support and help, these were invaluable. At the local scale, having individual household resources was crucial to how participants could manage after each large earthquake and were often added to neighbours, to provide collective resources. Participants in all four case study suburbs described their coming together with neighbours for meals, for sharing food and tools and for socialising to help reduce stress. Engaging with others in a common situation helps to make sense of what has happened (Lewis, 2013). Outside of the disaster research, local neighbourhood is noted as the scale at which individuals can acquire resources for assistance (Bernard et al., 2007; Hobfoll et al., 2007).

5.8.2 Built environment

The suburbs described as having little community response were generally large suburbs built on the flat in the housing boom following World War II. They have an urban form of uniformity, of family homes, wide car orientated streets, often lack a centre or a hub and have a deficiency of social infrastructure or meeting places. Not having a meeting place or central hub made it difficult for residents to meet or mobilise and therefore were less able to adapt to the circumstances. Thornley et al., (2015) also noted suburbs without a central gathering place received less support from external agencies including the volunteer clean-up efforts. It is hard to organise a response where there is no place to meet. This also challenged agencies to organise relief efforts. Suburbs that showed strong and well recognised collective action are geographically defined. The response was strengthened when combined with a centre or a community hub that enabled local leadership to activate others and residents had places to gather.

Lower socioeconomic neighbourhoods, but not necessarily the most deprived, in the south and east also found the post-earthquake period difficult. In these suburbs residents were working but perhaps income poor. They were more vulnerable for multiple reasons. First, they were near the most damaged parts of the city, second, they or their neighbours did not have access to the necessary resources to manage – food, tools, or social connections. Importantly, many of these

suburbs had the same built environment features in common as those described not doing well in other parts of the city of car dominated lay out and lacking a centre or boundaries.

5.8.3 Leadership

A significant driver was leadership, at the individual, neighbourhood and organisational level. This leadership also re-emerged and withdrawing back into the community following each large aftershock. Carlton and Mills (2017) describes similar in their study of the Student Volunteer Army that repeatedly responded after each large aftershock. For three key informants, the lesson from the time gave them an understanding and desire for strong community; they have continued to work for their communities. Mamula-Seadon, et al., (2012) also reported on the importance of and the role of community leaders to initiate a response. They used the terms self-activating, self-sufficient, self-responsibility and self-management as the key traits contributing to the individual and community level response. Like Paton, et al., (2014), the results point toward a key indicator of a neighbourhood or community that did well was this emergence of local community leaders. Leaders brought together and organised door knocking for the vulnerable and contacted authorities or external groups and agencies to gain necessities. They also helped to initiate and facilitate community activities that brought people together. Many leaders were women, who were well embedded within their local communities through longevity of tenure, school, church and community groups.

Suburbs that exhibited strong action had another common element related to leadership. The composition of residents living in these suburbs tended to be more enabled, they had access to resources, were well connected socially especially through their local community but also across the city through linking capital. Individuals had connections within formal structures, whether civil defence or council that enabled them to specifically call for resources. This is not random. Many interviewed described purposefully or more thoughtfully (and could afford to do so) selecting where they live. Participants and key informants had selected to live in their suburbs because of the strong natural or geographic and social features of those suburbs. The composition of residents plays a part in community resilience.

Pre-existing groups and activities were important to the response. Key informants spoke of Māori leadership. Māori used significant bonding, bridging and linking social capital through their relationships with government and social organisations. Māori organisations at all levels played a significant part in the response and immediate recovery. What this study shows and what has now

been recognised in the literature whānui⁴¹ provided resources, accommodation and support for households, particularly in the east (Solomon, 2012). Ngāi Tahu marae provided resources (Te Puni Kōkiri, 2011) to many, including Māori from other iwi who endured a disproportionate impact of the earthquakes (Kenney et al., 2015). A Te Puni Kōkiri (2011) review found within a week all marae accommodated evacuees in Christchurch and across the country for residents who had left Christchurch to return to their iwi.

Leadership also came through well-established organisations such as local churches and pre-existing formal organisations including the regional and local council civil defence team welfare centres. Without the efforts of the South West Baptist Church, parts of Hoon Hay and surrounding southern suburbs would not have had such early post-earthquake support. The Grace Vineyard Church in New Brighton provided similar support for the New Brighton area (Thornley et al., 2013). Key informants also noted local churches and formal organisations are well recorded here and by others (Vallance & Carlton, 2014). Larger third sector organisations could complement what the smaller organisations were doing. Leadership within larger public bodies and organisations including local schools and clubs was valuable. The service based capacity of these organisations provided skills, connections and leadership to mobilise residents. An important function was to help navigate the bureaucracy of civil defence, to distribute information and help identify the vulnerable for needed specific support.

5.8.4 Adaptability

The social connections and networks that were in place prior to the earthquake was crucial to helping residents adapt to the changed circumstances. They could cope and manage and then to help others. This adaptive capacity and functioning enabled communities to be resilient at the time of the earthquake and through the period of recovery.

Civil defence was overwhelmed with the extent of disruption to services. But also, civil defence and council management did not adapt, both continued to adhere to guidelines and processes that were no longer relevant. In the process, they turned away individuals and groups who wished to help. This was also described by Carlton and Mills (2017) and where risk management was focused on policies that endured (Cowlshaw & Mathewson, 2012). This is noted as common following a disaster (Majchrzak et al., 2007). Bhandari et al., (2014) described how established emergency response organisations prefer to continue to work within their pre-disaster framework

⁴¹ Whānui – involving every member.

and struggle to be innovative or open to the extent of the situation. While many community organisations such as schools and churches were not prepared, they worked to adapt. Often adapting meant moving and working around bureaucracy, acting beyond and breaking the rules. Volunteer effort groups had to adapt across multiple fronts. Exhaustion and tiredness affected many volunteers within these groups working long hours every day without a break. Marae, school and church leaders described the need to care for the carers, especially for the repeat responders following the aftershocks. These organisations not only had to adapt to each earthquake, but also the time between as communities struggled. This was also observed in Japan following the 2011 Tōhoku earthquake and subsequent tsunami (Atsumi & Goltz, 2014).

5.8.5 Direction

Disasters accentuate what people value and most of the people interviewed expressed a desire of maintaining the new awareness and understanding of community. At the same time participants recognised this would be a challenge. Many interviewed referred to the latent goodwill that is tempered in normal everyday life'. Quarantelli (1982) was among the first to show that people and organisations react in positive and constructive ways to extreme conditions after disaster events. Participants acknowledged the goodwill while also speaking of the continuing difficulty and stress of the post-earthquake period. Christchurch residents' normal routines of life were disrupted. These routines bring a sense of safety and trust (Laing, 1965; Giddens, 1990). This breaking of normative social behaviour can be stressful and increase anxiety (Giddens, 1991; Mitzen, 2006). This disruption to social order can also bring about positive collective behaviour (Solnit, 2009). For most interviewed helping others fulfilled this need for positive action while also satisfying the need to talk and be with others. Helping provided direction through the social activity and continuity of physical action enabled residents to cope with positive effect. The literature shows that only receiving support can have detrimental effects on self-esteem (Hogan et al., 2002). Outside of the disaster literature taking the opportunity to help has also been shown to have positive effects for individuals (Post, 2005).

5.8.6 Information and communication

Helping filled another need. Participants described their need to tell their stories in order to make sense of the traumatic experience of the event, observed in other studies (Carlin & Fuller, 2012). Talking had benefits, provided opportunity for problem solving and emotional support in immediately following the disaster. Importantly, this talking helped to gain and share information about housing and gaining access to food and water, later it was often having access to important

information relating insurance issues. Recovery agencies and formal institutions used groups and gatherings to distribute and disseminate much needed information. Talking and being with others enabled those experiencing the earthquakes to understand and to gain control of their lives. The reflective witnessing through talk is part of social commentary and as described helped to reduce stress (Carlin & Fuller, 2012). There was a reputation among Christchurch residents of talking around the water well of talking while doing everyday activities. Anderson (1991) describes imagined communities, where large groups of people have a sense of connectedness and connection with others through shared experiences or circumstances. The common experience was the earthquakes.

5.9 Chapter summary

Pre-existing social connections within neighbourhoods were essential. There was no time to make new friends or new neighbours. Neighbourhood is generally not seen as a source of great emotional support (Grannis, 2009), but after this disaster sequence all interviewed recognised the importance of their neighbours. Even the most passively generated neighbourly relationships were welcomed. The current Mayor of Christchurch summed up the importance of neighbourly relations in the time following the earthquake sequence.

Leanne Dalziel, Mayor of Christchurch: *How can you love your neighbours if you don't even know who they are?*

This chapter highlights the importance of pre-existing social connections in a disaster setting. Social connectedness and social networks had many positive outcomes; to help to adapt and solve problems, for knowledge and information sharing. Later, connectedness provided opportunities for communities to be with others, to accept and provide emotional support among residents, as well as the opportunity to share the experience as part of healing and helping to normalise the situation. The literature is clear on the importance of social capital in supporting community resilience.

This chapter also highlights the need for further enquiry into how best to harness the collective effort by individuals and emergent groups as part of community resilience after a disaster. Policy and planning practice needs to ensure the participation of communities as part of the civil defence response. Positive action not only reduces stress but enhances the collective action of residents as a tool for response. Suburbs identified in this study strong collective action, the self-help to adapt and emergent leadership had well established social connectedness prior to the earthquakes. These

places had in common specific features of the natural and built environment. These were well defined geography or boundaries and significantly a community hub or centre often provided through social infrastructure. Local places for social interaction were the basis of the development of social connections and networks. They were how residents of neighbourhoods knew each other before the earthquake period and helped to bring people together to satisfy basic needs when needed. The next chapter delves deeper into exploring the features of the built environment that helped to build this observed and essential social connectedness.

Chapter 6: Results - Local environments and social connectedness

6.1 Introduction

This chapter ascertains the elements or features of neighbourhood that helped to form participants' social connections and networks. Neighbourhood as described by Kaźmierczak (2013) is intrinsically intertwined through the physical and social dimensions of liveable and shared places. A domain within the urban setting that is both home as a place to live and outside for social interaction. To reflect this, the findings are presented here in two ways. First through a more linear formulation describing the features of home and neighbourhood including their everyday activity spaces. This section includes descriptions of the built and natural environment, in relation to where their home is situated, including the role of social infrastructure. The second is thematically presented through the lens of sense of place and belonging that helped to facilitate an understanding of what occurred. This has a more direct focus on their sense of belonging and connection to their place. A discussion and reflections section follow although a more detailed discussion of the findings of this chapter is presented in Chapter 7. The last section briefly summarises the findings of the chapter.

6.2 Neighbourhood and suburb attributes

Before discussing how the local environment affected social connectedness in the four case study suburbs, it is useful to provide participant descriptions of their lived experiences of their suburbs. The first two neighbourhood attributes acknowledged were housing type and greenspace. Nearly all participants stated they preferred a mix of dwellings old, new, large or small. Participants from Merivale and Phillipstown both raised the loss of older style housing to new medium density homes. They were not against the new housing, their concern was about the loss of green space, especially large trees to meet parking requirements for the new developments. All participants were aware of the amenity, social infrastructure within and across theirs and neighbouring suburbs. Parks, playgrounds, libraries, schools, supermarkets, and sporting facilities like pools and sports fields were identified as important. Phillipstown participants spoke of the lack of such amenity.

Hoon Hay - Five participants spoke of feeling at home in Hoon Hay, three who live near Rowley Avenue did not. This was because of changes associated with rental transience through Housing NZ homes, to them this made the Rowley area less desirable. All participants liked that there were families and residents of all ages and stages of life. Hoon Hay, key attractors were proximity to family and friends, access to the central city, primary schools and the Port Hills. For three it was

their association with the local Baptist church. Many were long term residents who had moved in years earlier when Hoon Hay was a new subdivision and affordable for families with small children. Not one Hoon Hay participant knew the boundaries of their suburb. All but one discussed the long straight roads or how disjointed the suburb was because of intersecting main roads. Most participants spoke positively about their access to natural spaces and to council facilities. At the same time, seven participants desired more meeting places, for example, a pub or a quality café. The two exceptions live at the northern end of Hoon Hay with shops, a pub and parks. Tom described how he had two primary schools and a preschool along with a pool complex all within walking distance. Ellie, in her early twenties lives less than one hundred metres from Tom, described Hoon Hay very differently as a place with nowhere to go and no reason to stop. The road dividing their homes may account for this difference.

Ellie (Hoon Hay): *No one really stops there...you really wouldn't stop there.*

Merivale – A significant attractor to Merivale for participants was the ability to bike or walk into the central city, Mona Vale homestead and gardens, Botanical Gardens and especially to Hagley Park. Merivale participants referred to the varying housing mix compared to the other suburbs. The style of housing described depended on the location of the participant's street, one used the phrase 'a hodgepodge of styles.' Participants miss the old villas and gardens that have been replaced by medium density housing. Proximity to social venues such as restaurants and pubs were viewed as a positive feature. Participants also noted the importance of the many private schools as providing a sense of busyness, noting that during the school holidays, Merivale grows quieter. Half the participants wished for the SUV or Merivale tractors to be banned from their suburb. Four said that Merivale comes close to be a town centre and two used the word village. Three participants would have liked being closer to the hills away from the flat, but the leafiness and having a good balance of social and service amenity and convenience kept them there.

Opawa - All Opawa participants stressed they lived in a friendly and beautiful suburb due to the proximity to the Port Hills and the Heathcote/Ōpāwaho River for walking and exercising. All referred to the closeness to the central city and the benefits of having a small town centre with a doctor, pharmacy, dairy and other small shops. Children can walk to school and Risingholme and Hanson Parks provide natural places to carry out activities. Most described Opawa as family friendly and leafy with a diversity of housing from large older homes near the river, as well as smaller and Housing NZ homes. Seven participants used words along the line that Opawa is a close-knit suburb. Participants spoke of being able to grow into the suburb because of the primary

school and places to walk. All participants mentioned the large trees across the suburb. Participants referred to how they liked the Tannery⁴² as a place to socialise, valuing it as a social asset.

Phillipstown – This suburb was defined by its proximity to the central city with participants saying they could walk or cycle there. All referred to the loss of access to places and the central city after the earthquakes. Phillipstown participants described their neighbourhood and suburb by main and cross roads. Six of the nine Phillipstown participants said they had not initially wanted to live there, but they had learnt to love it because of accessibility to Eastgate and the Palms malls and the central city. All participants reported the lack of access to places for recreation and local use. Three referred to the local café closing early in the afternoon that caters for workers but not residents. Participants valued the Phillipstown community hub and involvement of the community policing team, describing the police effort as helping to improve the area over the last 10 years. Participants described how prior to the hub there was ‘little trust, dogs and alarms.’ Everyone identified the lack of green space and trees, noting their parks are small and not very accessible. Access to Edmonds Park, for example, is through a long alley where locals did not feel safe. The park is also bounded by busy roads. One participant said that ‘when you are standing on Bordersley Road you cannot see one blade of grass.’ Three participants valued the diversity of cultures there. Five participants thought that Phillipstown was likely to improve because new people were moving in and renovating holder homes, they also worried about the increased density.

6.2.1 Mapping participants use of their neighbourhood, suburbs and the city

Participants were asked to draw on a map how they use their local neighbourhood, suburb and the city. I asked they draw the route they take to get to work, to shop, exercise and where they meet others, the places where they socialise. They were also asked to mark on the map the location of where their family and friends live. The activity spaces for participants in the four case study suburbs are different. Buttamor (1980) describes the sociological dimension of spatial behaviour, as well as lifestyle and social stratification, but since the 1980s there appears to be little progress in the literature. The four maps presented (Figures 6.1 to 6.4) indicate the combined activity space used by participants in each of the four case study suburbs. Merivale and Opawa participants use more of the city for their daily or weekly activities. Phillipstown participant activity spaces were mostly smaller than for participants of the other suburbs.

⁴² A new development in an old industrial precinct with independent shops and small eating places.

Hoon Hay participants indicated they tend to remain within the general vicinity of south west Christchurch, socialising in the local area and using the Port Hills for recreational activity (Figure 6.1). One cyclist travels to MacLean's Island in the north of the city for cycling and another plays hockey in the northwest of the city where playing fields were not damaged through the earthquake sequences. Participants go into the central city or the southern edge of the city for employment. Most walked around the Port Hills or along the river and used council provided facilities in neighbouring suburbs. Hoon Hay participants shop in Barrington and Riccarton in the west of the city.

Merivale participant activity spaces (Figure 6.2) encompassed most of the city from Rangiora in the Waimakariri District in the north to Darfield in Selwyn District in the west through to Banks Peninsula (not shown). Social activity drove this difference. Participants had friends and family in Sumner, near the Port Hills and northern suburbs. Participants also used the Port Hills and Banks Peninsula for physical activity, socialising and two had holiday homes there. Many in Merivale work within the central city or more central locations, even those where employment was still temporarily housed while waiting for central city buildings to open or become available.

Opawa participants use large areas of the Port Hills and coastal area around Sumner well. Many here worked within the general central city area and socialise there (Figure 6.3). Family and friends and most socialising also tended to be in the central areas or the south of the city in neighbouring suburbs, especially the Port Hills, coastal areas and the central city. Employment also tended to be in the central city like Merivale participants.

Phillipstown participants travel small distances going about their daily lives (Figure 6.4). Some participants travel to the supermarket or a local club or hub weekly and do not venture much beyond that. The two who do not drive occupied the smallest activity space. Two older women, who were very sociable, travelled furthest but mostly within the south of the city, one going to Hoon Hay, Heathcote Valley and New Brighton as part of a music group. The other travelled to Redcliffs to look after her grandchildren. A painter from Phillipstown placed the point where he started work each day in the west of the city but not where he worked across the whole city. Family and friends were also close by in Phillipstown or neighbouring suburbs toward the east.

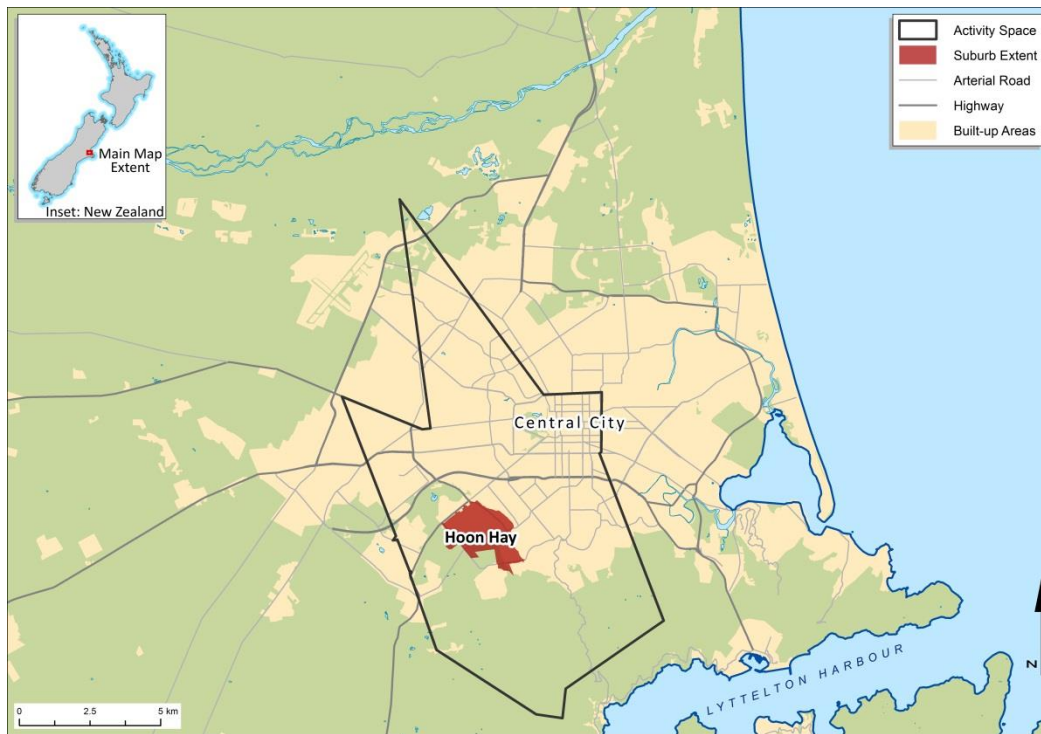


Figure 6.1 Hoon Hay participant activity space

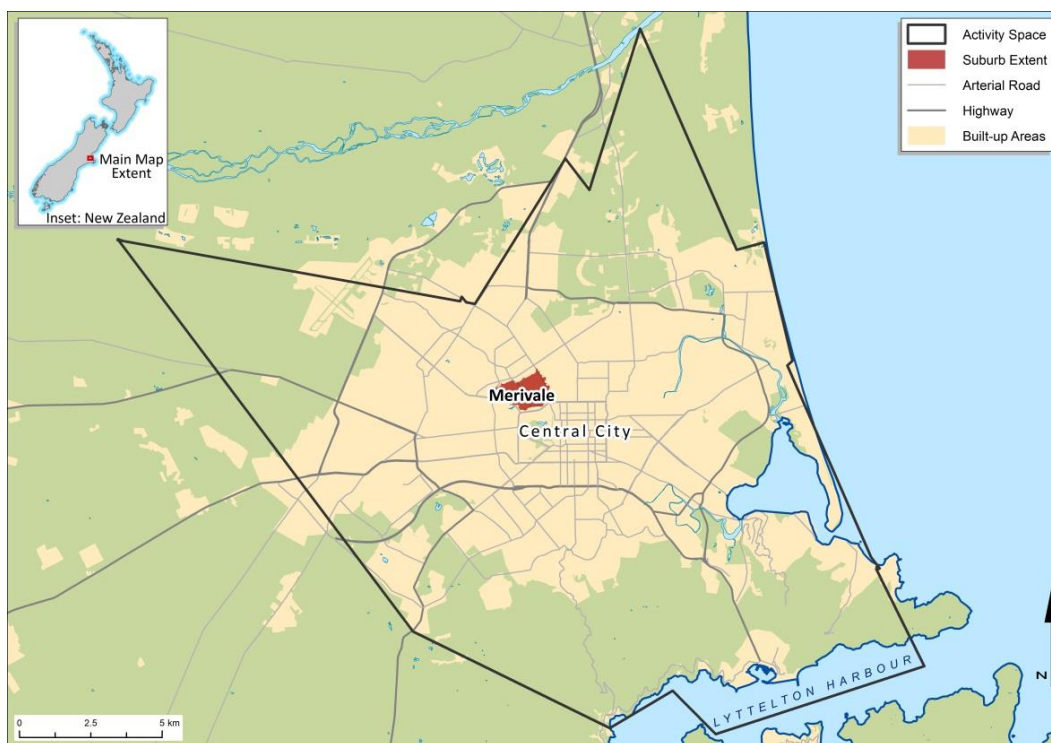


Figure 6.2 Merivale participant activity space



Figure 6.3 Opawa participant activity space

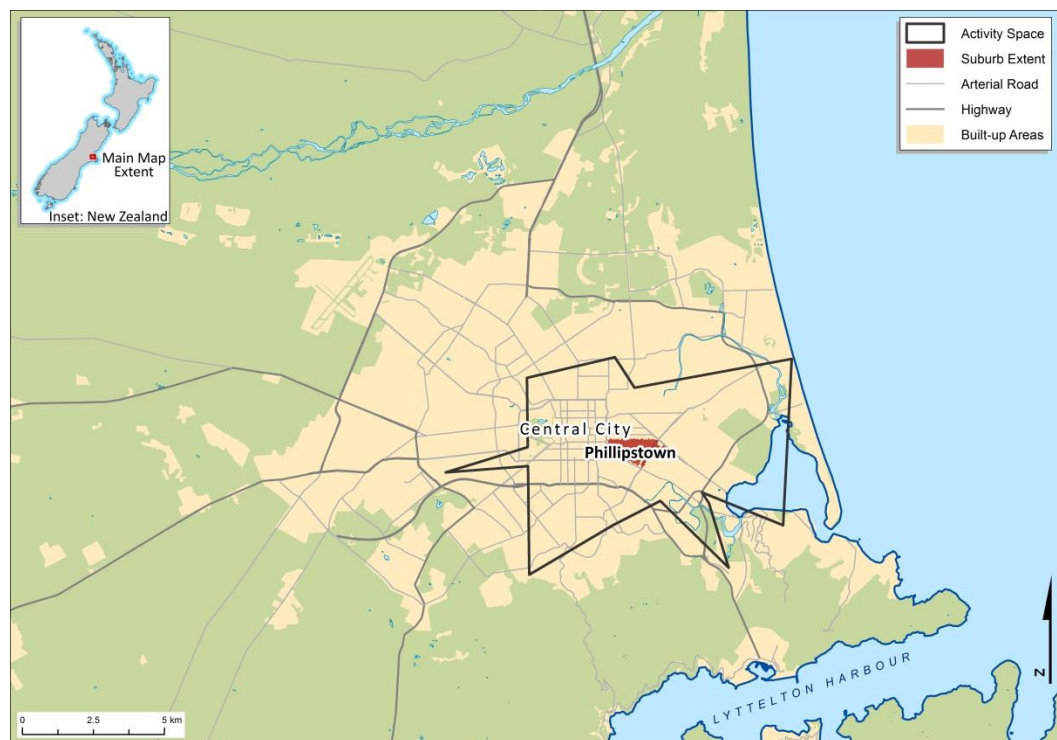


Figure 6.4 Phillipstown participant activity space

Those in professional occupations were more geographically independent travelling across the city, most reside in Merivale or Opawa. Their social activities were spread across multiple suburbs

whether working, playing sport or visiting friends, their sense of place was more extensive. These participants used the entire city as they went about their daily lives. Many described their social connections through employment or specialist interest groups and were not so geographically bound. This was noticeable for parents whose children did or do not attend the local school, rather a private school or one near to their employment.

6.3 Built urban form

This section reviews home and neighbourhood through the form of the built and natural environment. There are strong links between this and the next section as contributing to a sense of place. This occurs at a range of scales, the first discussed was related to home.

6.3.1 Characteristics of home

Participants were first asked to describe where they live, their street, neighbourhood and suburb. All but one participant started with a description of their home and where it is located. Participants spoke of a strong attachment to their home as the place that grounds them, the centre of their physical lives, a place that provides structure, where they feel safe and can have some semblance of control. Most participants talked of the importance of having the constancy of place, referring to the spatial context in which their day to day activities are carried out. Participants directly referenced their need, following the earthquakes, to get back into routines and to have security and consistency to carry out their everyday activities. The permanent displacement of families or individuals who had been red zoned was brought up by many interviewed. Most referred to awfulness to lose the special places relating to home. Chris expressed what many other participants voiced about those who lost their homes due to the earthquakes.

Chris (Merivale): *I can't think of anything more stressful to lose your home or not know what is happening with it. I can't imagine how it would be to lose your home after you have put your heart and soul into it and then lose it with a blink of an eye. It would be awful.*

Others discussed the importance of having the constancy of a familiar and safe place and the need for established routines in daily life. Three participants and a key informant spoke of the loss of routines following the earthquakes and the effect on the lives of elderly people. One was clear on the effect of the loss of routine on her mother.

Libby (KI): *Unless old people have somewhere to go or a reason or a connection it is terrible, before the earthquakes, she used to go to Zumba, card games and lots of other*

stuff, every day of the week she had something, she had structure in her life. After the earthquakes, she couldn't cope, a year and a half later she was in a rest home and a year later she died.

This is a similar story to three others interviewed who were also confident that the loss of routine and daily connections caused the earlier than anticipated death of their elderly parents. One explained the loss of routine meant her mother's dementia could not be managed – she also went into a home and died shortly after. There is a place for reliability of social activities and the value of continuity for community.

Three participants found when they were out of their homes for repairs that it was difficult to continue with children's activities. They noted it was especially important for children to have the ability to get on and do the usual things of life. As described earlier in relation to renting, two participants were saddened that their children's childhoods would be defined by moving many times, living away from school and friends but especially having no connection to a home base. The effect on children was not part of this study, further research is warranted of the effects of leaving home, the home territory and social connections. Most interviewed had to leave their homes at some point for home repairs or rebuilds, some for years. Two participants and one key informant were just beginning the process of overseeing rebuilds. As I write six years later, one participant is part of a class action and there is no timetable for rebuilding his home. Key informant Jane spoke of Mark, a work colleague who was out of his house from September 2010 to early 2015.

Jane (KI): *Then four weeks ago Mark was back into a new house rebuilt on his old section and it was six o'clocksurrounded by boxes with nothing done, but he was home. He said a huge weight had been lifted off his shoulders, suddenly he had some control.*

Having this sense of control also came from another source, one of constancy. For Libby, her place of work has been the constant; she described it as her home.

Libby (KI): *Like schools have been children's constant, my job has been my constant, it has become not my place of work but my home, you know workplace - home these things have almost reversed, they are all the same. I cannot think of leaving here.... I can't because I haven't got my home to go to.*

Libby went on to speak of sporting teams, hers and her children's in helping to provide a stable sense of routine and comfort. Libby also missed her garden.

Gardens

One feature of home raised by many interviewed was the importance of having a garden. The connection to gardens was strong. I interviewed most participants in their home and typical of New Zealand most live in stand-alone housing with a garden. Participants showed me their gardens as part of the general conversation before the interview began or as it ended. For many, their sense of home was entwined with their garden. This was well expressed by Libby.

Libby (KI): *This is the stuff we don't look at for research is someone's garden is their haven for them because they are introverted because they need to have talking time to themselves and recharge in the garden. For those who need people they don't recharge in the garden they recharge in their community with people, church group on Sunday and schools.*

Campbell (2014) found similar in her interviews with residents of the red zoned areas, where they had to leave their homes. For some, leaving their gardens was the most stressful part. Trees were acknowledged as an important component of the garden. Participants expressed how trees held memories especially relating to events or children. The garden was described as having time out, for creative self-expression and to be active, for Susan it was her free time.

Susan (Merivale): *I do the garden, a beautiful garden, my days are so scheduled that I love having time to myself with no planning.*

For Phyllis, the garden kept her to her place, she was clear she would move if she didn't have a garden.

Phyllis (Phillipstown): *I hate shifting and I would hate not having a garden.*

Home and garden was a symbol of stability. For three who were still waiting for their homes to be rebuilt not having access to their gardens was emblematic of the waiting.

Libby (KI): *All I want is vegetables and rocket, fucking rocket every time I buy it at the supermarket I think why am I paying for this rocket? I want it from my garden.*

There is a cultural importance associated with gardens as part of the living at home, the performance of maintaining a home and helping to provide a sense of belonging. For some participants being able to establish a garden was part of the ritual of daily life. Helen was still waiting to return to her home on the Port Hills.

Helen (KI): *I don't have my soulness⁴³ place; I cannot do my garden or a house because I am in rental.*

Housing typology

The prominence of garages and specifically automatic garage door openers were discussed in disparaging terms without being prompted by twenty interviewed. This was about seeing neighbours and those who live near, because entering homes via the garage reduces interaction among neighbours. This was clearly expressed by Frances.

Frances (Hoon Hay): *Because we cycle a lot we would be different from those who drive in and out and go into their garages because we have the interaction with those walking that you don't have when you drive to work and you drive back home and you drive into your garage.*

Andre having moved from his damaged home in Cashmere discussed how he missed the orientation of his old home on a lane where he could casually meet neighbours when he arrived home. In his current house (temporary) he enters the house through the garage.

Andre (Opawa): *There is a lot wrong with the planning provisions about garaging.*

Andre's house is one of the newest in an Opawa cul de sac. It is typical of a 1980s style with the double garage directly facing the street. No doors and few windows of the house look to the street at ground level. He commented on the design and how driving straight into the garage meant he did not see neighbours when he came home.

Andre (Opawa): *I miss the ability to easily to interact, we had seven close neighbours on our lane, plus we know people over and down the road because we are dog walkers and we would see them all the time, so there was seven or eight years of interaction and it built up over time, so we had a relationship.*

Garages in these older suburbs tend to be set to towards the rear of the house. New developments in Merivale and Phillipstown follow the trend of new subdivisions with garages near the road providing direct access. When key informants were asked what they would do to improve social connections within neighbourhoods, six were very clear that garages and fences presented a barrier to meeting neighbours, here are three examples.

⁴³ Here Helen was referring to her quiet place where she can be alone to think and appreciate her surroundings

Chrissie (KI): *Get rid of fences would be a good start... probably garage openers too.*

Sooze (KI): *You can't be known if you drive into your garage, you need to be known.*

Tony (KI): *People get into their cars and go to work and then come home, press the little button for their garage and go inside to their private spaces never once turning around.*

Key informants and participants spoke of new subdivisions without direction. They were not asked to give a comparison between new and established suburbs. Many referred to homes in new sub-divisions on the outskirts of the city. The different ways of speaking about them can be summed up by John's comment, he was clear about the need to be seen.

John (Hoon Hay): *I just wonder how lonely some people are behind their private spaces, there used to be the front veranda where we used to sit and they would see people walking past and they had conversations and they would say 'hi' and now they sit in the lounge with the curtains down and the TV on.*

Some interviewed used almost sympathetic tones while others were more negative, identifying isolation, the lack of local and the not knowing neighbours in new subdivisions. Two participants had moved from new subdivisions, where one had had a positive experience and the other had not. Participants had also heard from family members and friends having seen the difference in lifestyle. Six interviewed had moved temporarily into a new subdivision while their homes were repaired or rebuilt. They did not feel at home there, even with family and friends were living close by. Four respondents who completed the questionnaire went on to speak about their time in new subdivisions while their homes were rebuilt in Merivale and Opawa. They said living there was insular, or lonely. One described himself as sociable, but he had trouble meeting neighbours and making connections. Another described his neighbours as two parents driving out early taking their children to care on their way to work; he said, "what a way to live". All were concerned about the lack of connection.

Ann spoke of a friend who left a new subdivision in Aidenfield in the south west of Christchurch to move to Hoon Hay.

Ann (Hoon Hay): *She just about died because no one wanted to know anyone and everyone had their fences and buttons to their garage doors _____ and she is now involved with people in her street, there doesn't seem to be the barriers like living in a new*

subdivision that are sprawling and don't have any shops or stuff like that, although shops were planned for there, but they never eventuated.

Ann was probably more sensitive to moving and repeated this, as she herself had moved from a new subdivision in Lincoln⁴⁴ to Hoon Hay. Ann had lived in a cul de sac with no front or side fences and for her this had been a positive experience of good community prior to the earthquakes. Ann moved into Hoon Hay just after the September earthquake because, as she described it, they were only sleeping in Lincoln. The whole family went daily to Christchurch for school and work. Ann said she gave up a new house in favour of walkability, a reduced mortgage and to be closer to friends; to be nearer to the other parts of her life. Residential choice literature discusses employment related travel, but little exists on the dependency of and effect of the transport of children. For Ann, proximity to church, schools and friends had a greater influence on choice. This shows the difficulty with making comparisons across the urban landscape where different aspirations and cultural norms exist.

Cassie came to Christchurch immediately after the September earthquakes. She and her family moved into a new subdivision in Halswell. Cassie described how her neighbours there were very self-contained. They had family close by and friendships through their professions. Cassie moved to Hoon Hay because she had not discovered local community, she expressed a strong desire to be part of a community.

Cassie (Hoon Hay): *We didn't discover community there and we really wanted community as when you are nobody you need it.....and so by the time they had all their family and friends they didn't have any room for others in their lives.*

Cassie described Hoon Hay as being less well-off than Halswell. Cassie noted that around her in Hoon Hay there were more tradespeople and fewer professionals, or in her words "like accountants." She found Hoon Hay to be more friendly and willing to participate in neighbourly relations. This adds to the mapping of activity space where those without strong professional or special interest relations seek community in their neighbourhood. Helen found the same.

Helen (KI): *If I think about it, my husband he is a tradesman and he doesn't socialise with anyone at work, so he has to socialise in our community, whereas if you are an office*

⁴⁴ A township 23 kilometres south of Christchurch in Selwyn District.

worker or a professional you might socialise more with those you work with, or if you are in a business maybe your social life is not where you live but somewhere else.

Cassie was attracted to their current cul de sac because of a community basketball hoop where her children played. Through this community placed equipment, Cassie said she and her children had gotten to know the neighbours quickly. Most participants described how they met others in their neighbourhood through children, through school, babysitting or community events.

Debs, also from Hoon Hay, when asked what she would like to change about her suburb was the removal of all fences. Debs lives in the more established car orientated part of Hoon Hay, a typical suburban street, with fences between all homes. Grant talked about his resisting fences in Phillipstown, where they were introduced as a means of security.

Grant (Phillipstown): *I don't really want fences in front of properties and I have discouraged my neighbours to do the same, but it hasn't always worked but we have managed to keep the height of them down... not sure why a big fence equals security.*

Four participants referred to housing quality as the reason, so many had moved to new subdivisions, to be in warm and secure housing, compared to older established housing. Grant spoke about housing in general.

Grant (Phillipstown): *This current government talks about affordable housing, in fact all politicians talk about affordable housing, I would like them to talk about adequate housing. WOF is part of that, yes and that is a different conversation there is some very inadequate housing in Phillipstown, but they are gradually getting less.*

Researcher: *Do you think that is why people like new subdivisions as they get a new house?*

Grant (Phillipstown): *Oh yes, a warm house and a gate.*

This segregation of private and public space can mean it is difficult to establish near or close relationships, if neighbours cannot be seen directly or others who live nearby. One participant in Hoon Hay deliberately took down his fence and placed a seat in the front of his house so people could stop. He said many had commented positively on this.

Connection to the street was important to most participants. Participants spoke of collecting the mail or weeding the front garden all help to create a connection with the street. I found three respondents to the questionnaire (Merivale and Hoon Hay) who were mowing or sweeping the

berms in the front of their homes. All spoke of how these activities were useful to engage with or get to know neighbours. Physical access around home also contributes to seeing and knowing neighbours.

6.3.2 Street morphology

The role of street morphology for enhancing social connections was an unexpected finding of this research. Most participants referred to the type of street they lived on and how it influenced their connections. The street was seen an integral part of neighbourhood, a place to socialise and for transport. Many interviewed described the long straight busy streets of their suburbs like Hoon Hay Rd, Papanui Rd and Ferry Rd as barriers to those living on the other side. Long streets were also seen to reduce connections as described by Chrissie.

Chrissie (KI): *Having those long long streets are a generally barrier to connectedness.*

Ann is very sociable and lives on Lyttelton Street, a relatively busy arterial road. It is long with fast traffic and few pedestrian crossings. As Ann spoke, she realised and was surprised by how few people she knew on the other side of the road.

Ann (Hoon Hay): *I do visit the old lady over the road but most are on our side and others in Hoon Hay, but we definitely know more on our side of the road. It does seem strange that we know those on our side more.*

Sandra in Phillipstown, when asked about her street, discussed how few she knew on the other side of the street, upon reflection she put this down to the street being very wide.

Sandra (Phillipstown): *I realise now how few people I know on the other side of the street; I am thinking this is because it is so wide ____ actually I grew up on a cul de sac and we used to play in the street__ it was great, and it is private and safe for kids on the street.*

Sandra lives down a short driveway behind another house and talked about feeling safer in her home away from traffic and the gang activity associated with the street she lives on. Phyllis and Grant also noted the importance of street width and traffic speeds.

Phyllis (Phillipstown): *Our street is wide so we don't know each other.*

Grant (Phillipstown): *Here as the streets are very wide. One of the big complaints I have is that there is no traffic management down our streets, they go too fast, they are very wide.*

Participants live within diversity of street forms, busy main roads, smaller traditional grid pattern streets and small streets that border the Heathcote River/Ōpāwaho. A surprising number of participants live within cul de sacs. Cul de sacs are primarily the result of housing developments bordering the river and creeks systems, especially in Opawa, but also in Hoon Hay. Others interviewed live within what can be called a lane way or drive, some of which enclose between two and 10 homes. I found these participants through snowball techniques or speaking with them directly on the street. I was unaware how many live in a lane or cul de sac until the interview took place.

Carole from Opawa lives on a street bordering the Heathcote River /Ōpāwaho. She commented without direction on the cul de sac that her mother lives in down the road, where she noticed close and cooperative behaviour following the earthquake. Carole described how those living in a cul de sac would be like living in a unit, particularly if there was a leader within that unit. She used the phrase “*they would be sorted*” and then referred to two other cul de sac streets nearby.

Carole (Opawa): *I imagine if you live in a cul de sac or a small street you were a unit.*

Andy, also from Opawa, lives within a cul de sac with four other homes. He discussed how blessed he was in living there, where his neighbours have since become good friends. An elderly couple talking over each other described their cul de sac in Opawa the same way.

Flo and Frank (Opawa): *I really think the type of street is important, the cul de sac behind us has been great for us.*

Margie in Opawa said:

Margie (Opawa): *I do feel safe in my little cul de sac; I cannot imagine living in a place where you are afraid.*

All participants who live within a cul de sac or a laneway discussed the ease of getting out on to the street and socially interacting with neighbours. Andre, in contrast, said he did not find the same sense of security living in his cul de sac in Opawa, as it ended at a public park where people walked through. Andre had moved after the February earthquake from his damaged home on a laneway with eight other homes on the Cashmere Hills. He talked about missing the orientation of his home on the hill that enabled him to interact with his neighbours. He spoke of having fewer opportunities in the cul de sac than in his laneway. At the same time, he recognised that this was better than the usual street, where he pointed to needing to be active in getting to know neighbours.

Andre (Opawa): *You would have to kind of manufacture the opportunities to meet others.*

When asked if he would live in a cul de sac again he replied:

Andre (Opawa): *Yes, I would buy in a cul de sac, I know that planners hate cul de sacs, but that is what I would do, lane ways too as they are private and allow an interaction that is more intimate and yes, you are more in their lives so you have to get on.*

Merivale has few cul de sacs, but it does have a few historic narrow streets. Participants described the narrow streets as personal and valued the intimacy. Denise and Chris live on two similar narrow quiet streets in Merivale. Both discussed how the slowness of traffic and the nearness to neighbours makes the street friendlier.

Denise (Merivale): *I live at 40 right in the middle and I know people opposite, the ones with kids and all the families with kids the same age. So, it very much is a family street.*

Chris (Merivale): *It is a narrow little street and is quite secluded from most of the major through traffic, it has a lot of nice people and we know each other by name.*

Lanes provided a most intimate of living arrangements. Brian's home is along lane with four other homes, off the main street in the centre of Merivale. Brian spoke about how he and his family interact with the other families on the laneway. It is good for his children to be able to play there with others. Ginny also lives in this laneway and spoke of her "little mini community". She went on to talk about how the neighbours support each other, especially during the earthquake time or if one loses a family member. Ginny referenced the good community she had in her previous home in Sumner, but that this was different due to the intimacy of people around them. She spoke of the culture of the drive.

Ginny (Merivale): *Like Jill being a saviour at 5 on a Friday, saying come on over for a gin, its gin o'clock and it is just like you know(big breath out and laughs). So that is really cool and has saved me so many times. And that is why I say it is more than a friendship it is whānau - family through a different way.*

Sarah, a young participant from Merivale, discussed the different feel of her street compared to where she grew up in another part of Merivale, where old homes remain. The higher density of her street has garages facing the street, a loss of trees and reduced visibility to neighbours and people outside. Sarah said it felt different. Participants from Merivale on wider streets with higher density and more renters did not know their neighbours well. The design keeps them apart.

Sarah (Merivale): *I am in the depth of Merivale but my street has a different feel to the rest of Merivale, it is not tree lined and it is a higher density so feels different, hmm (pause___) that is probably why the feel of the neighbourhood is not so strong.*

When asked about communal or green space around her block of flats, Sarah replied:

Sarah (Merivale): *We have our own established gardens and a decent amount of space but they are all private and high fenced and Marie even locks her garden fence when she leaves the property and is very security conscious, which is bizarre given how safe Merivale is and I feel safe there.*

The loss or lack of trees and greenery was noted by participants in these medium density areas.

6.3.3 Perceived suburb boundaries

Key informants acknowledged the different city suburbs first by the geographic features or characteristics. The first suburbs identified have strong and well perceived boundaries through geographic features such as the coast, harbour, Port Hills, rivers or a large park. All interviewed noted this geographical definition helped to form a sense of place of knowing where they live. This was valued. Bill described how Southshore with the sea on three sides, residents know their suburb.

Bill (KI): *If you are from Southshore you know where you live.*

Key informants noted that because some suburbs are well-defined residents, therefore, tended to do things more within their local communities, Sooze from Heathcote Valley agreed.

Sooze (KI): *Like Sumner and Governors Bay our geography, the geographic area that creates our sense of identity and that identity gives you a sense of belonging and that then gives you a community that relies on one another, if you feel a sense of belonging to a family you will give to it, and receive from it as you belong to community, if you know where the boundaries are you say you belong to that place.*

Key informants and participants talked about having lived in other parts of the city where homes sprawl from one suburb to the next with little clue as to the suburb area. Sooze referred to her previous address in the north of the city, she described a suburb that sprawled with no clear boundary.

Sooze (KI): *You have to know the boundaries of where you live so you can belong to that place.*

Both Bill from Southshore and Sooze from Heathcote Valley spoke of their sense of attachment identifying first with their suburb before identifying with the city. They both put this down to socialising within their suburb and knowing the boundaries.

Bill (KI): *When people are geographically bound they tend to do things more within their community.*

Half the key informants identified that unless the suburb boundaries are known, it is impossible to support and represent those who live there. Simon also explained that more people participate locally in known locations.

Simon (KI): *Participation is much more difficult in less geographically defined communities within the city.*

Sally lives in Opawa and was clear geographical boundaries provide a sense of place.

Sally (KI): *We know exactly where we live, so does Sumner or Southshore....When you are talking about geographic boundaries, I think it also based around a node like a supermarket or a shop or a school and depending on how you see your community it is how you relate to the place you live in – the village.*

Some were defined by having a strong centre or a central location that was identifiable through social infrastructure, such as a school or community facility such as a pool or library. Key informants stressed that physical community is important, and the earthquake period had confirmed this.

Well-defined neighbourhood boundaries were important to enable belonging. Half the key informants indicated that a main issue for Christchurch suburbs is the inadequate definition of some suburbs. This is a result of flat topography, but also poor planning. Christchurch has many suburbs established post war WWII with similar housing and little differentiation. A house on a post war street could be in many parts of the city. Large parts of Hoon Hay would fit into this description. June was adamant that Hoon Hay was missing a sense of identity, that it lacked definition and a suburban centre to differentiate it from elsewhere.

June (Hoon Hay): *Yes, I do, I think there needs to be something in each suburb that is a reflection of who lives there, but this suburb has never catered for that.*

Visual demarcation is necessary because of this urban flatness. Five key informants spoke of the need for special attention to be given to consciously design for what the topography provides in other cities. They referred to new suburbs with stone gates and names indicating the entrance to subdivisions. Many interviewed said suburbs need to be defined by physical or functional units with features or definition by name, natural demarcation using trees or parks. Rivers were noted to create suburb boundaries, especially the loops in the Avon/Ōtākaro and Heathcote /Ōpāwaho rivers, both defining and dividing suburbs. Suburbs can also be identified through socioeconomic demarcation, by social deprivation or affluence such as Merivale (in fact it is mid-decile) or Phillipstown.

Mark who lives in a suburb with no centre and poor access to local facilities, noted how his school community, a physically defined area came together to help after each large earthquake sequence.

Mark (KI): *I am a bigger believer in community much more than I used to be, especially physical ones.*

6.3.4 Having a centre

As well as having known boundaries, the importance of having a centre or a community hub was raised by both key informants and participants. Everyone were very direct that having a centre of shops or a node such as a supermarket, a pub or school or even an active church was as important as having geographic definition.

Andrea (KI): *It's hard for people to engage with each other when you don't have a meeting place to come together, I mean Aranui has a core, a library and playing fields and shops and schools where you can yak. Here is only the petrol station, how do you have a chat at a petrol station? I really worry about the suburbs with a lack of a hub as it makes it so hard for communities to connect well.*

Similarly, key informants familiar with the east discussed new suburbs like Preston's, as street after street of housing off a main feeder road without a central core.⁴⁵ Building houses before amenity was discussed as poor planning, the result of which makes it more difficult for the new residents to connect as a local community. One key informant was positive about Preston's

⁴⁵ Some social infrastructure has been built since these interviews took place.

because it is geographically distinct, but also noted that it still needed places for people to meet. Central infrastructure such as schools, shops and services are critical to community formation (Scott et al., 2015). Andrea talked about what was needed in North Beach, this suburb is also called North New Brighton.

Andrea (KI): *So maybe having a community centre that brings the community together, here they go to work on the other side of the city and come home late at night, there is no central key place and so nothing happens in North New Brighton ever.*

Sooze from Heathcote also spoke of the importance of having a central hub. The pub in the centre of Heathcote was demolished following the September earthquake sequence. Then as the epicentre of the February earthquake, other community buildings were severely damaged and demolished. This loss of central and social infrastructure was felt strongly by the community over the intervening years until a new pub, and then community centre was rebuilt in December 2016.

Centres also need to be accessible. Barrington Mall is the closest shopping centre to June in Hoon Hay. June does not drive. The roading pattern and lack of direct public transport makes it difficult for her to walk there. June goes to Halswell that she can access by bus, even though she sees the value of Barrington as her local centre.

June (Hoon Hay): *Our nearest shops are in Barrington but if you are on the bus Halswell is the easiest.*

Researcher: *Do you consider Halswell⁴⁶ your centre?*

June (Hoon Hay): *No, it is only a supermarket; I consider South City or Riccarton and Bush Inn but sadly not Barrington because it is hard to get to on the bus. The local dairies and shops are important and are great meeting places, but you have the element who wants to take them down all the time because they are a small shopping centre.*

June recognised the importance of local dairies and shops as meeting places. She was concerned about how larger interests, the big companies were trying to centralise shopping to the large malls. For people like June, who do not drive or have access to a car, walkability and public transport are essential.

⁴⁶ Since this interview, Halswell has a revitalised centre with council service centre, library and upgraded pool, and supermarket to cater for the new large scale greenfield development there.

6.3.5 Social infrastructure

Social infrastructure such as libraries, pools, and public spaces were all referenced, but for most the focus was on schools. Nearly all interviewed referred to the importance of primary schools, as an essential place within the community for social interaction.

Schools

Schools were observed to be places for children and families, a place that provided consistency and certainty, particularly during the post-earthquake recovery period. School was the bit of every child's day that could be under control, as one said "nine to three was sorted". Schools were described as providing multiple benefits, for education but also as an important hub for parents and caregivers. School gates were a central touchline for storytelling and the sharing of knowledge and resources, a daily place to socially interact with others.

Participants acknowledged the importance of having a local primary school. Libby described schools as a critical hub in the formation of neighbourhood and community.

Libby (KI): *They are so much the hub for communities, they are so valuable and my bias of coming into this is having smaller community schools, not the American big system.*

The closing and amalgamation of schools across Christchurch by the Ministry of Education in early 2013, was discussed by all key informants and half the participants. Education Minister Hekia Parata closed seven schools and merged 12 into six. The Minister described this as essential under an assumed prospect of migration away from damaged suburbs. It is hard not to be critical or cynical of this decision, especially when nearly all were in lower decile areas and some had little damage. School closures affected two case study suburbs; Hoon Hay with the closing of Manning Intermediate and Phillipstown Primary School. The loss of schools has been very difficult, often referred to as the "dark moment" or as Irene put it 'as awful'.

Irene (KI): *The timing of the school decision was awful, now when kids needed stability, just appalling the way the timing was for that.*

The greatest focus was given to the closing of Phillipstown Primary School. Phillipstown parents fought the Ministry of Education in the High Court to stay open with both strong community protest and city-wide support. The Ministry maintained its position and the school was finally merged into Woolston Primary. "You might be able to close a school, but you can't close a family," was reported in the local paper (O'Callaghan, 2014). A key informant familiar with Phillipstown

reported that many of the children relocated from Phillipstown School would not go to Woolston Primary because of the need to cross a busy six lane road. Their alternative is another low decile school that in 2014/15 had a pupil turnover rate of about 40 percent associated with housing and employment issues. Participants like Linda could not comprehend the decision.

Linda (Phillipstown): *The school they took them to is in a flood zone and requires children to cross big roads and has half the land available for play.*

Linda went on to explain that she participated in the ‘before and after’ school programmes. She was worried that the positive change seen in children’s behaviour from these programmes would now be lost. Linda was angry the Ministry of Education did not consider the broader societal implications of school to a community. Three other participants from Phillipstown directed me to speak with Tony Simpson, the principal, about the importance of schools in community development.

Linda (Phillipstown): *Closing schools affects more than the school, it affects the whole community.*

The school was important to bring activity into the streets because as many had noted there were no bumping places in Phillipstown. There is no swimming pool, no supermarket, no café open beyond mid-afternoon. Shelby said the same.

Shelby (KI): *The school was the only bumping place for Phillipstown and then the Ministry closed it, the constancy in the children’s lives. The Ministry did not see the school as a community hub or the importance for the community.*

Joan who is elderly and lives alone really noticed and missed even the little interaction with children in her neighbourhood.

Joan (Phillipstown): *I am not happy about the school because the school kids made lovely sounds at about nine as they would drift on past and then at three they would come back and you could hear them talking and laughing....a bit of movement in the area.*

Following the school closing, Phillipstown families negotiated the use of the vacant site as community space. This suburb may not have had an observed strong and immediate collective response compared to others, but participants reported a difference between pre-and post-earthquake. A key informant spoke of how the earthquake and the school closure had helped to develop greater social connectedness. Pre-quake there were six semi functional neighbourhood

support groups, after February this increased to 26 and these have been maintained. The community hub has been instrumental to this change incorporating community policing next door. The hub has become the bumping place and Sandra living close noticed the value.

Sandra (Phillipstown): *Yes, huge we love the facilities and Phillipstown gathering. The kids love them and it is a great place to get together and just spend the day in the community (smiling).*

The policing team has had a focus on prevention and have found different ways to connect with the local population through the hub, especially the young. The police set up neighbourhood support groups to strengthen social connections and networks and into organisations.

Amenity and facilities

Social infrastructure such as pools, library facilities are also highly valued and many noted their fortune that they still had access to facilities compared to the East. The loss of facilities immediately after the earthquake was also referred to as a difficult period. Although they acknowledged there were alternatives, travelling there was problematic due to damaged and crowded roads. Participants missed large facilities such as Queen Elizabeth II Park (QEII), which has since been demolished. Participants spoke of their memories, of its loss, as a loss as the place where they and their children had learnt to swim, spending time there as teenagers, and filled with sound of laughter and chatter. Participants recognised it was going to be a long time until a similar facility would be back for the city.⁴⁷

Libraries were visited by half the participants and used as places for after school activities where they could meet their children after school or could meet friends. All ages valued libraries, especially those with children. A few participants did not go to libraries after their children went to high school or had become more independent. Newer libraries that integrated many activities, service centres, access to computers and games and a café were valued most. Adrian, a young American, was surprised when he arrived in New Zealand at the quality of publicly provided social infrastructure. His experience of growing up in the North West of the USA was of the private sector providing such facilities.

⁴⁷ The Metro facility with large pools and sports facilities in the central city is due to open in 2018/19, although has been delayed and so may take longer.

Adrian (Merivale): *I come from a different place, socially and culturally, and I don't expect my suburb to provide me with a social network.*

He spoke of the integration of people from all socioeconomic backgrounds using these facilities and valued this as did others.

Libby (KI): *Christchurch is blessed with great libraries – these are great community hubs, modern spaces where you are able to eat and talk and work and to play too.*

The importance of libraries was brought home after facilities were closed post-quake because of damage or were used as council office space because the central city buildings were closed. Libraries were closed for long periods after the September, and February earthquake sequences. Lucy spoke of how libraries were also where residents came to source information.

Lucy (KI): *You know they shut them down after September and everyone came to the door looking for information, I remember when they reopened South Library, I went around there on a Sunday afternoon and it was packed and people were inside stroking the books, it was quite lovely, quite beautiful, really.*

Community centres and halls were identified as important for social activity and interaction. Direct references were made about the loss or delay of opening facilities and how this lack of access had severely affected some, especially elderly people. Community centres were differentiated from halls, which were judged as old-fashioned. Older participants reflected on halls as a place where people used to come together for dances and other social activities in the absence of social opportunities. Key informants said halls were not useful for social interaction now primarily with a teaching function through private teachers or organisations. Elderly people in contrast still saw halls as places to participate in activities and meet others as part of their daily routines for activity classes. The Post-quake CERA wellbeing survey identified the need for places for the young and old, where they could come together and where they could be engaged in sport or activities (CERA, 2014).

Local shops

The local dairy or shop was identified by nearly everyone interviewed. Participants spoke of the value of walking to a dairy or to local shops, especially a fish and chip shop. Hester (1993) refers to shops as sacred structures, where these mundane places hold value. In all case study suburbs, being able to walk to local shops, the local dairy and fish and chip shop held considerable value.

This was especially strong for children, as walking to the shop provided an independent activity that was seen as safe. Ann spoke of her children valuing the ability to be able to walk to the local shop alone.

Ann (Hoon Hay): *We were talking about it the other day, the kids said we they went to visit a friend in Aidenfield⁴⁸ and that said it would suck being more than 20 mins walk to a shop or dairy, so they like being close to shops or library, it is all good to have walkability.*

The quality of locally available shops was noted, for example, Phillipstown participants missed the shops that had been demolished, as new fast food outlets replaced the fish and chip shop and local dairy. Hoon Hay participant June who lives close to Rowley noticed similar issues.

June (Hoon Hay): *Can you call them shops up at Rowley because I certainly don't.*

Participants from Merivale all spoke of their proximity to the city, the grocery shop or supermarket to Hagley Park and to pubs, to the smaller local fish and chip shop and importantly the local dairy was valued. Claire laughed when she thought about the local dairy.

Claire (Merivale): *Isn't that funny how we don't have a name for them, given how important they are to everyone?*

Local and walkable was vital to social interaction. All participants, except one, discussed the pleasure and importance of being able to walk to local facilities, particularly in relation for children walking to school or preschool and to a park or playground. Half the participants with children indicated their preference for their children to walk to school and to be able to stop at the local shop on the way.

6.3.6 Natural and green space

I asked participants what use they made of local green space and other natural environment areas. All interviewed said greenspaces were important and then went on to elaborate how they used them. Natural places were spoken of in many different ways. As places to reflect alone and take time out and enjoy, a place to run or walk the dog and bump into others, to meet friends and neighbours and enjoy socialising, and a place for children to run around. Nearly all participants

⁴⁸ A new subdivision to the south west of Hoon Hay.

referred at some stage about the importance of natural places in their lives. For Ginny it was spending time alone.

Ginny (Merivale): *Hagley is soul food for me because we were in Sumner and I loved the ocean and this is the place I go to here, the natural place, it is my replenishing time.*

The aesthetic quality of some environments held value. Sometimes this related to quality parks such as Hagley, but also to more natural places. Merivale participants actively make a detour to go through Hagley to get to the city. The exotic trees found in Hagley Park, the seasonal nature of the area was important for all those who live close. Merivale participants referred to this frequently. Ginny spoke of her need to go to Hagley Park.

Ginny (Merivale): *Walking in Hagley Park every day and I also do a bit of morning perambulation that cuts through a couple of parks are an absolutely vital part of my life.*

Three participants from Opawa and from two Hoon Hay near the Heathcote River/Ōpāwaho and its tributaries referenced how the river was important for them, for the natural quality. To see and hear native species held strong value. Opawa residents were very clear about their access to the hills and river environment and walking tracks where they would see others. These parks also contain large old exotic and native trees. When Beth was asked, what helps her identify her suburb, like many in Merivale she directly referenced trees, large old trees.

Beth (Merivale): *My trees, I know them by name (laughing)*

Trees were identified strongly as a significant and important feature of neighbourhood. More participants spoke of the importance of trees in Opawa and Merivale than in Hoon Hay. Respondents to the questionnaire, spoke directly of the importance of both green and natural places, identifying their special parks and their need for and love of large trees. When participants referenced new subdivisions, it was often the lack of large trees that was a significant factor for not wanting to live there. A quarter of all participants referred in some way to 'little boxes with no trees.' Pip spoke of living in Northwood while her home was repaired, as she spoke, she intently looked at a large tree in her garden.

Pip (Opawa): *Over there all the houses are beautiful and lovely, but you haven't got all the big trees and there are so many rules and regulations and won't ever get big trees like that birch tree.*

Most participants in Phillipstown wished for more trees and access to the natural environment especially for children to play. Three participants from Phillipstown would walk to the Avon River/Ōtākaro going there for the naturalness, for the large trees and water. The trees draw them in, then provide opportunities for people to see or bump into others. In this area medium density many spoke of the loss of trees to vehicle parking. They also noted the empty wide roads, commenting they would prefer crowded streets with trees. Grant was concerned for children.

Grant (Phillipstown): *There are only drive ways where kids can play with balls, there is no green place at all. And then they go out onto the road, and look outside and I cannot see any greenery, but it would be lovely if there were trees, but there are none.*

Natural spaces can be a hub for a community, important for communing with nature but also enabling people to bump into and gather with others. Sometimes this was by an almost mutually agreed routine, dog walkers know when others are out walking. Caregivers also join other caregivers, so their children can play. They preferred the walks that followed natural contours or features that gave sense of nature and to see others. Sports fields were not used in the same way. Hoon Hay Park is mostly made up of football pitches. Locals described how every weekend in winter the park is full, but empty in summer. I found few people in Hoon Hay Park, compared to Domain Park in the north of Hoon Hay with a more natural setting that follows a creek. More people were among the trees alongside the stream. I rarely saw people in neighbourhood pocket parks. Denise lives close to a pocket park.

Denise (Merivale): *It is too small and there is no reason to go there I will walk through it but I don't make it a destination.... and I don't have a dog to walk.*

Many recognised that pocket parks tended to have fewer trees, Ginny when asked what she would like to change she replied:

Ginny (Merivale): *More trees, more trees to soften the area and more community spaces like parks so we get lots of greenery to encourage people to do things together.*

Susan expressed this relationship between trees and having a sense of identity and place.

Susan (Merivale): *And I do like to live in the well-established suburbs with trees and some kind of identity.*

Participants in the south of the city spoke of having limited access to natural places in the years following the earthquakes. The Port Hill tracks were closed due to potential rock fall, the hill

parks were closed and swimming in the sea was prohibited because of sewage contamination from broken pipes. Being unable to venture into their favoured places, participants felt a strong sense of loss. It was described as an awful time. Most referenced how authorities were slow to open spaces due to safety reasons. They were not seen as a priority for recovery. All interviewed strongly expressed a desire to get back to their everyday activities and these natural features were viewed as place indicators to do that, places to interact with others and provided a strong sense of place.

6.4 Sense of Place

This section explores participants understanding of where they live, their communities and neighbourhood. Where people live is in part about the individual home, but also of the communal area around home, the surrounding neighbourhood context. The focus here is on how the configuration of their local environment helps to shape their social interaction and sense of place.

6.4.1 Community, neighbourhood and suburb

Participants had multiple communities, and all were readily able to describe their community or various communities. For a few their first community revolved around their church, their work or their sporting connections, or a mix of all. All were clear that their communities were diverse, like Sally.

Sally (KI): *My community is the people I see daily, so I have different communities, I have a school community and family and that is a more extended whanau community, I have a community of neighbours and old friends and I have communities of interest as well as my work community, so different people at different times.*

Beth was one of six participants who said her communities were about providing fulfilment.

Beth (Merivale): *I am in multiple communities and it is about my needs being met.*

Sarah's grandmother is elderly and well embedded within her street, having lived there for decades. She also ensured her connections continued by helping neighbours to babysit their children; in return, she remained part of her neighbourhood community.

Sarah (Merivale): *Where there are pre-established pre-existing relationships that are positive and strengthened become foundational for good lifestyles like my grandmother, who is still in her community rather than in a retirement village, and that is based on her good relationships with her neighbours who watch and make sure she is ok.*

For the majority interviewed, their geographic community, the place where they live was their significant community. Participants variously described their community as their street, neighbourhood or suburb. Some used one scale while others noted community attachment at all scales, including the entire city.

Choosing the current location of their home was not a direct question, but arose from their reply about what they liked or would like to be different about where they live. Choosing where to live is complex, as choice consists of multiple options in relation to schools, work and personal activity. Different factors or features were identified and there were similarities and differences among case study suburbs. For some, especially Hoon Hay, the priority was proximity to family and/ or friends. Phillipstown participants in contrast, generally lived there because it was where they could afford to live. Many had been there a long time and said it was now home. Some Opawa and Merivale participants stated they were sufficiently affluent to have a choice, identified proximity to the central city, environmental quality or natural spaces with large trees, and the social quality with walkable access to places. This contrasts with research on residential choice by residents in new subdivisions in greater Christchurch. Here, residents tended to value new homes, status and the homogeneity of residents and place (Heins, 2015).

Alan spoke of western societies losing the importance of place. Like other key informants he noted that when people buy a house, many do not think of place, but rather seek a style of house to represent their values or status.

Alan (KI): *The real estate of a place is a big factor, Sydenham is a great place it is close to the city and has easy access to everywhere, but not many people target it.*

Alan went on to discuss the importance of where people live and their relationship to home and surroundings, especially the natural areas. This lends to the significance of providing different living environments across the city to meet the diverse needs of residents. For two interviewed, it was about opportunity and moving into permanent housing near to where they had been renting.

Tim (Hoon Hay): *Well it was a bit like opportunity knocks really, we were looking around the area, it was to be our first home as we were renting and we wanted to get our own place.*

Two participants referred to the process of moving to Christchurch and having to choose where to live. One approached a real estate agent who told him that because Christchurch is flat, new comers often choose to be near the hills, coast, river or other natural places. Andy cycled around

the city across many suburbs over a period of weeks until he found his current home in a cul de sac in Opawa beside the river. The other participant was directed to Merivale because he had school age children, that provided choice of public and private schools and was close to his employment in the central city.

Across the four suburbs, personality, life style, affordability, personal values and attitudes, and wishing to be near like-minded friends and neighbours influenced their choice. This is described elsewhere (Schwanen & Mokhtarian, 2007). Many participants desired to live in a community where people were like them, while stating at the same time they valued diversity. Three participants in Hoon Hay had strong relational community around church, but they also strongly recognised the spatial community in which they lived. Hoon Hay was a mid-way point where they could meet people like themselves, have ease of access to the city and the hills, local schools and council infrastructure. Three Opawa participants referred to Opawa as the Fendalton of the south with old large villas, diversity of home typology and very importantly trees and access to natural areas. They valued status, but access to nature was why they chose Opawa over more central suburbs.

Neighbourly relations were strong in all case study suburbs and the earthquakes helped many to value their neighbours. Martin was surprised having lived in his suburb for decades.

Martin (KI): *I have learnt to understand and appreciate my neighbours... and helped me to understand neighbourliness much better and the importance of it.*

Most interviewed had routine and relaxed relationships with their neighbours. Half the participants joined in some formal gathering with neighbours at some stage. Participants described their efforts to have joint meals with neighbours once, twice or three times a year. Those who did not were renters or lived in the parts of their suburb where there was turnover of residents in the medium density housing or Housing New Zealand properties nearby.

Within the same street there was a difference among participants socialising with neighbours. These two are good friends and see each other often, but have different experiences even though living close by.

June (Hoon Hay): *Yes, I do often with both my neighbours especially on the right and we have each other's house keys.*

Kath does not live that far from June but has a different view. The house next door to her used to cater for long term Housing NZ tenants. A change in policy has seen an increase in short term tenancies.

Kath (Hoon Hay): *Where I live I wouldn't trust either of my neighbours as far as I could throw them.*

Five participants described how neighbourly relations strengthened after they came together to fight a development proposal. Two participants in one street in Opawa spoke of how fighting against a proposal to build a child care centre in their cul de sac, had brought the street together socially. Participants in Opawa also spoke of fighting the building of an offenders' residence in Woolston near to Opawa. A member of the Opawa Residents' Association said the only time they came together was to deal with such an issue. Proposed developments such as these that may threaten attachment to place can evoke collective effort (Manzo & Perkins, 2006). The most significant community building exercise occurred in Phillipstown to fight the closing of the primary school and is discussed later in Chapter 7.

6.4.2 Bumping places

Seven key informants and six participants used the term bumping places. Most interviewed could identify the bumping places in their suburbs. Others used general terms of meeting informally or crossing paths to refer to bumping into friends. Ruth used a different phrase.

Ruth (KI): *I like places where people are at rather than places where people have to go.*

All but a few interviewed acknowledged that this local bumping is important. The shape of the built environment can contribute from multiple perspectives. In the first years following the earthquakes, there were few formal places to meet. Participants recognised that this had made it difficult to meet and socialise. Bumping into others is connected to walkability and having places to walk to. Debs described that without a community hub this can be difficult.

Debs (Hoon Hay): *Because walking somewhere you see people and that is really important to us to see people and have that eye contact and being human together, it is really hard to know where the villages are.*

Alan was very clear that local was about walkability, of being physically set within the local place.

Alan (KI): *For stuff I have done in the community shows that stuff has to be within five or ten minutes walking distance, doesn't matter if this is a park or open space for exercise or whatever or where people can meet such as a café or restaurant, all these help.*

Researcher: *Why is walking important?*

Alan (KI): *I think that once you get into your car it is not local, of course you can drive to the end of your street and is local but.... I don't stay within my suburb within my car – in some ways it is that attachment to place, whereas driving removes you from your place.*

Denise works in a new subdivision at the south west edge of the city where I interviewed her, she had similar views. As we spoke she looked up and waved her arm around.

Denise (Merivale): *If you look around here, they will have to drive everywhere.*

Denise said that walking past neighbours was the reason she knew her neighbours well.

Denise (Merivale): *Because you walk past, you know your neighbours, so I know most of the people on my side of the street.*

Key informants and participants described how primary schools enable residents to bump into each other, like Shelby.

Shelby (KI): *Schools pop up constantly as the bumping places for mums and sometimes dads.*

Some also spoke of valuing places within the urban fabric where you need to look at the person coming toward you. The meeting and greeting of people in small spaces as you pass. Participants in Opawa felt this also promoted a sense of safety, citing places such as street connections and river bridges where people cross paths.

Zelda (Opawa): *You need to acknowledge who is crossing.*

In some suburbs, the bumping places were not so obvious. A key informant from Heathcote Valley said a couple of old seats placed on the verge became especially important following the earthquakes. Street berms⁴⁹ or council reserve land between home and the road was considered a good to meet and greet others. Maintaining the grass helped to get past the fences and to meet

⁴⁹ The grass strip between the footpath and the road.

neighbours or locals. Chris in Merivale said because his house is open to the street he sees neighbours walking past and so it was easy to acknowledge them.

Chris (Merivale): *It can take a long time to get to the shops unlike the places with fences and garages.*

Dog owners were said to be very good at bumping into others. All valued this interaction, often they walked their dogs at an unstated but mutually agreed routine time. This intentional social interaction was noted by many interviewed.

Chrissie (KI): *If you have kids and there is a playground, and if you have a dog and can take it for a walk. Dog owners bump well. They may not know each other's names but they know the dog's names and so they make eye contact and they talk.*

Cassie (Hoon Hay): *Having a dog we go to the domain every day and doesn't take very long to know others.*

Carole (Opawa): *We have Micky the dog, I meet others with dogs, the bumping into people is so important, I think it is what I like and that is what I connect with.*

Margie (Opawa): *I have a dog and I spend time in the parks getting to know and talk to people there.*

Debs from Hoon Hay reminisced about the days after the earthquakes. Debs described this time as like weeks of public holidays when everyone was at home. She went to the park daily where she could bump into others and talk. The connecting and joining of people was through enabling local infrastructure, a place to meet. Winnie described the deliberate placement of furniture at Eastgate Mall to support social interaction.

Winnie (KI): *Eastgate is unlike other malls in Christchurch, as it has chairs and couches where people can sit and chat, it's not necessarily just a food court, Eastgate has a sense of community, unlike the others which is about getting people through and spending.*

6.4.3 Gathering places

Places where people can gather were central for participants of this study, as a social hub or heart for social connectedness and interaction. Gathering places helped with personal recovery after the earthquakes. Nearly all participants commented on the loss of social spaces and places, especially those places that enabled people to gather or socialise. Key informants commented on the delay

to open buildings as community gathering places immediately following the February earthquakes. Council took too long to provide clearance even where a simple fix could have made a building safe, even prefabricated moveable buildings were not opened. To counter this loss of the usual places to congregate, spaces were used in creative and innovative ways. Some residents' associations and enterprising community groups initiated and negotiated the use of disused homes or old prefabricated buildings as community meeting spaces.

A reinvigorated Southshore Residents' Association asked their community what they needed six months after the February earthquakes. The Southshore Community House arose out of this brainstorming session, where many residents were feeling isolated in the post-earthquake period. They were unable to source information about managing their damaged homes, land and infrastructure. Community houses such as this and in Lyttelton attracted residents who need access to local support. For some it was about this access to information, for others it was about having a place to meet others such as elderly people or caregivers at home with children, the unemployed and self-employed. A constant or formal place to meet, like the place of work or the relational connections daily employment can provide for others. Even when the centre was not used by some residents it still held value. Bill found through a community survey that residents valued the presence of the Southshore Community House, including those who did not use it.

Bill (KI): *I was amazed at the huge number of people who said that it's great to have a community house, I never go to it but I know it's there and that is important.*

When the funding ceased after two years, the activities were moved into a more community hall style arrangement. Residents found it difficult to adapt to the hall, citing that it was less intimate and homelike. The house with a living room had provided a warm and convivial setting for their daily or weekly meetings and practice.

Parks were also used as places to meet neighbours for wide range of users from the daily connections made through the routine meeting of dog walkers to more purposeful neighbourly gathering. Debs described how the local park was their meeting place in summer.

Debs (Hoon Hay): *Over summer we were doing a fish and chip tea at the park and we would start at five and have our tea in the park, some had small children but not all, a guy in his 30's came who doesn't have kids but wanted to have a sense of connection.*

There is a need to cater for the differences among suburbs. Phillipstown participants described needing social drawcards or specific infrastructure within a park. Phillipstown has many solo

parents and most are income poor, also many residents live in medium density housing that may not cater for outdoor space. Key informant Winnie works in Phillipstown said that specific spaces such as a barbeque were needed within the local park.

Winnie (KI): *Make a space for younger kids and half court for older kids and a place for elderly to sit that is open sided so they can see what is going on and provide for families to get out of their houses and be with others.*

Active connectedness for social interaction occurred across suburbs. Project Lyttelton and the Lyttelton Community House were referenced as good examples offering social interaction, both were in place prior to the earthquakes. New or well-established groups led in many suburbs where residents initiated active social interaction through gathering activities in centres or parks.

Redcliffs, a suburb with considerable building damage lost its gathering places including the school, which is still temporarily relocated.⁵⁰ On the site of the then demolished supermarket, an elderly local resident made skateboard ramps. With permission from the site owners Reg and his wife Rena would daily unpack skateboard ramps from a locally donated shed so children coming home on the school bus could stop and skate there. Parents would meet their children and talk among themselves. With no community facility or any of the normal meeting places, the men's shed (where women went too) and a red-zoned house were used as gathering places.

Pubs as gathering places featured strongly across the case study suburbs. Most interviewed valued a local pub where they gather with friends to sit and talk. Pubs in the larger centres or central city are important, but local pubs also work as centres of local community conviviality and interaction. An example of a pub with a focus on community was founded in Heathcote Valley. This community lost their pub after September 2010, the community centre after the February earthquake. Then after the June earthquake sequence, the coffee shop closed. In the absence of a place to meet, the local vicar started a pub. Rather than deal with the difficulties of applying for a liquor licence she organised a 'bring your own' pub in the local church. This was a place for people to gather. Key informants spoke of this in positive voice and how it made such a difference to the community. Sooze discussed how the Reverend realised it was important for people to be brought together.

⁵⁰ After strong local support, the school is to be reopened in Redcliffs after the Ministry of Education attempted to shut it and move the children to one of two other schools, neither of which is walkable. It is expected to reopen on another site in 2018.

Sooze (KI): *I think of the leadership our Reverend Mary showed with the BYO pub, it was massive because people needed a place to go and went there often.*

The ‘church pub’ finally closed when the local pub was rebuilt. Residents without a quality pub desired one. Graham described how the centre of Opawa needs a pub. Their pub is on a main road and not in the centre of the community, catering for passer-by traffic and not for locals.

Graham (Opawa): *It needs a better centre it has always needed a neighbourhood pub.....see Heathcote Valley has rebuilt their pub and it’s the centre of the community. The one in Centaurus Rd is crap it has no soul to it, it is just a crap pub it is all wrong.*

One part of Hoon Hay has direct access to a local pub and this was valued locally for the casual ability to gather there, as Cassie noted. Ellie lives in the central area with little amenity.

Cassie (Hoon Hay): *The pub here is well used.*

Ellie (Hoon Hay): *There isn’t a café place at all. There you go there is a business for a café or pub in Hoon Hay.*

There is no gathering place in the central part of this large suburb. Participants from parts of Hoon Hay without a community hub and from Phillipstown discussed their desire for meeting places. They wished for a pub or a café, one that would remain open later in the day to serve locals needs not just for workers. This need for such gathering places was also noted by Oldenburg (1999) who wrote of the value of a third place in society such as a tavern or bar, lounge or pub. He went on to describe it as a public setting that is accessible to those who live there and that has been appropriated as their own and often taken for granted. This was observed and expressed by participants especially those without a local pub or café.

6.4.4 Creative spaces for gathering and recovery

The emergence of creative spaces marked the beginning of a positive moment in the recovery of the central city. These creative activity and spaces provided opportunity to gather often within the central city, to provide a place to be part of the city. Many interviewed felt the need to return to the central city, as part of relieving the grief for the loss of landmarks and places they knew. Participants needed time to find a way for them to be able to re-orientate to the new cityscape. The disorientation and reorientation has been a gradual process over the intervening years. For some participants, especially the older age groups found it difficult to navigate their way around the new and evolving central city landscape.

The value of the creative flexible spaces was also identified by most interviewed. The few participants who did not value the creative spaces in the central city did not use the city prior to the earthquakes. Newly organised groups initiated transitional and flexible spaces within the central city, filling the voids created by the post-earthquake demolitions. Parcels of land within the central city remained vacant due to the delay in planning for and rebuilding of the central city. This was the result of the fraught planning processes between CERA and the Council. The continuous sequence of earthquakes over two years, also contributed to spaces remaining empty, providing opportunity for temporary community use helped to bring city residents together and back into the central city. Gap Filler used these temporary spaces for social events, one specifically for community gathering, while the Pallet Pavilion was home to a range of community activities and performances. The Dance-o-Mat is still well used in the city today as a public dance floor activated through a coin operated washing machine.

6.4.5 Local identity

The geographical setting of a suburb helps to identify their suburb as part of providing a sense of local identity and place. This is a combination of the natural setting and the personal experience, especially with those living near to them. Rosemary spoke of the combination of features that were important to her.

Rosemary (Opawa): *It's the relationship to the rest of the city the proximity to things that are important to me like the hills and the sea, a sense of belonging and how well you get on with your neighbours and also local amenity.*

Many spoke of the natural environment features as the place that helped them identify their suburb. For Opawa residents this was the river and the trees that line it and the Port Hills.

Pip (Opawa): *I could never live on the north side of town there is nothing there that would ground me, I am grounded to those hills. We are not really north people. We are south people.*

When participants were asked if it is important that a suburb or neighbourhood has a sense of place, nearly all said yes. The few who said no, were renters. Again, participants referenced the need to know where people live to have a sense of identity and to belong to that place. Hayden who lives with his young family on a street borders Phillipstown and Linwood noted the lack of identity associated with not having a sense of boundary.

Hayden (Phillipstown): *Yes, I do think it is important and I don't know how much, I am not sure how much of my community would say that, Phillipstown or Linwood and Waltham don't have clear boundaries.*

After a significant pause, he went on to cite Eastgate Mall as a reference point.

Hayden (Phillipstown): *May be that is another problem, we don't have any landmarks, the only thing around us was the river and that is more Avonside, we are more land locked with a nice big cemetery. Eastgate would be our biggest landmark and if someone asks where we live, we always say near Eastgate.*

All interviewed were aware of the broader cultural/spatial elements of the city. Many spoke of belonging to their part of the city. Pip moved from Opawa to the north of the city while her home was repaired.

Pip (Opawa): *We lived out at our brother in law's place in Northwood and it has a good environment around there ...we did lots of walking through these beautiful places like Styx and thought 13 weeks over there with no pot holes and no ups and downs and it is a pretty straight route for me to get to work, I thought I would love it, so when we came back here honestly within no time at all I feel I belong here and I don't want to live anywhere elseI know why I am back.*

Participants spoke of living in the south of the city and differentiated themselves from those living in the east, north or west. The interviews indicate that Christchurch residents do, to some degree, identify spatially to the four points of the compass. Merivale participants were more attached to the name of their suburb than participants of the other three suburbs, who had a broader sense of community relating to side of the city in which they live. Many referred to the familiarity associated to where they grew up or had lived for a time. This provided a sense of security of where they are, of understanding landmarks and of feeling at home. Heins (2015) participants from Lindon Grove adjacent to Hoon Hay used the terms like “this side of town”, or “out near the hills or river”.

People need to know where they live and that is usually synonymous with the spatial community of where their home is situated. Nearly all interviewed identified the importance of knowing the name of their home territory. For some suburbs, there is a lack of clarity over naming. Key informant Simon referred to the confusion that occurs when names do not correspond to place, especially where the boundaries are not well defined. To make the point, Simon referred to where

he lives in Avonhead, a suburb built up through the post war period in the north of the city with a small shopping mall and unclear suburb boundaries. Simon cited a confusing example of three shops adjacent to each other in Avonhead Mall using local place names; the Merris Post Office, North Avonhead Pharmacy and Russley Supermarket. Susan remarked on the same for the central suburb of St Albans, where the shopping centre is called Edgware.

Susan (Merivale): *I guess it is funny that Edgware is called that because people don't know where it is as a suburb.... it is like what is the centre of St Albans it is Edgware, how does that work?*

Three participants from Hoon Hay discussed the names of significant features of their local neighbourhood. None of the names represent the suburb in which they live, Hillmorton High School, Manning Intermediate (now closed as part of the school mergers and closures), and the Rowley Community Centre. They did recognise that Hoon Hay Primary was further into the centre of the suburb. When June was asked whether she lives in Hoon Hay, Hillmorton or Rowley, she replied:

June (Hoon Hay): *It is not clear, technically we live in Hoon Hay and the Hoon Hay Club is over the road and across the road from there is Hillmorton High School, how confusing is that for a neighbourhood? And most of us around here will tell you we live in Hoon Hay or Hillmorton, the ones who tell you they live in Rowley are the ruffians.*

Participants found the lack of knowledge of local boundaries and names associated with some places as confusing, and detracting from providing a sense of place. Another significant contributor to developing and supporting a sense of place was associated with the stability of home tenure, of living in the same place for years, of belonging there. The participants who did not value belonging, were renters.

6.4.6 Home stability, renting and mobility

The stability of home was a strong theme that came out very early in the interviews. This was often referenced in terms of owning versus renting. A decrease of home ownership in some suburbs was described as changing the landscape of the neighbourhood. The preference for ownership was because of the greater permanency and sense of control, not only for individual households but to surrounding neighbours and local community. They expressed a strong desire for personal home ownership and to be near other home owners. Participants put emphasis on the significance of knowing neighbours and the benefits of longevity of place. Flo talked of the

advantage of being in her home for a long time. Flo met Grace in the house opposite 40 years ago, Grace brought home-made queen cakes to Flo in the hope she would invite her in for a cup of coffee.

Flo and Frank (Opawa): *And I did. We just had our 60th wedding anniversary and she came and others from that corner, (pointing). Our kids grew up together and celebrated their engagements and 21st together, which meant their mothers and fathers too and so it has been a long friendship and a lot of fun. I think we have been very lucky - it has been wonderful.*

Not everyone interviewed had such close relations with their neighbours, but living near to each other over a long time still had benefits. A community development key informant said:

Shelby (KI): *Not everyone needs to connect with lots of people but for everyone there has to be at least one or two that they can turn to and so then just seeing your neighbour can be very important.*

An example is Sylvia in Phillipstown, who remained alone during the nights after the 22 February earthquakes. Sylvia spoke of how it was ok being alone because she knew her neighbour was there. She does not socialise with him, in fact, she said they rarely speak at length, but there was mutual recognition of support. This came about by living next door to each other for decades. Beth also noticed the difference.

Beth (Merivale): *I have definitely made a connection with my neighbours who live there but probably not so much for those who are renting and are transitional.*

Most participants preferred having owners living near to them. The reasons given were predominantly about having the opportunity to develop neighbourly relations, even if cursory. The constancy helped to maintain trust, recognising it can take time to get to know new neighbours; something high turnover in rental accommodation does not provide. Debs from Hoon Hay lives in a street with many long-term renters said it was the transience and not the renting that was the issue.

Debs (Hoon Hay): *So thinking about those who I know who own and rent, they are equally embedded into the community, yeah because they have chosen to be here mainly because of the school and they are wanting to belong and gather a sense of belonging and sense of community, where other places where I have lived suburbs like Waltham and closer to the*

city where people just go off to work and so where they live is irrelevant, it is just an abode. Transience makes a suburb feel quite different.

Longevity of tenure provides home stability with similar outcomes to home ownership. Phillipstown has residents who have rented for more than 20 years and who regard the suburb as their home area. Key informants spoke of some good landlords who have continued to provide permanency even after house repairs were completed. They also spoke of others who following earthquake repairs increased rents, making them unaffordable to long-established renters. The purchase of ‘*as is where is*’ homes⁵¹ entering the rental market at lower cost has diminished housing quality and in some circumstances stability. Many interviewed said the more frequent moving of occupants has affected whole neighbourhoods. Two thirds, when asked about what they would like to be different about where they live said ‘*fewer renters*’. Because long term renters also said this, it would imply they mean the mobility associated with short term renters as described by Phyllis.

Phyllis (Phillipstown): *It is people who have been living in one place who notices the difference with tenants and renting.*

Phillipstown has always had long term tenants, home owners and those who moved through boarding houses. Most interviewed spoke of the increase in the moving in and out, like in other parts of the city. All viewed this as negative to neighbourliness and social connectedness.

Andre (Opawa): *The problem is not renters but because the rental market is so short term and rental rights so limited and you get more turn over and so less commitment and then less relationships of community and the rest of it.*

Other participants also remarked on the difference between longer term and short-term renting.

Pip (Opawa): *People have rented up the street but many of them are long term renters, so not so transient, so yes even though renting they are not transient, and yes that makes a difference.*

Adrian (Merivale): *Tenure is important...if I was up for a lease review every six months and could be biffed each time then I don't think I would be emotionally placed there.*

⁵¹ The term refers to a home owner taking the money paid out by insurers for a rebuild but who sells on to a purchaser in its current condition knowing that they cannot claim insurance on the damage or gain insurance on the property in the future. Many of these ‘*as is where is*’ homes are rented out.

One key informant, waiting for her house to be rebuilt and who wished to be back in her own neighbourhood, was clear that when people are renting there is less commitment to the house, street and the neighbourhood.

Libby (KI): *I have been renting for four years, and I don't give a shit about my neighbour where I am because we are temporary campers, we don't want to be here, I don't care about neighbours, they are nice enough but in a year's time I will be back to my home.*

Moving from one home to another within a community or neighbourhood may have different outcomes to moving to a new neighbourhood. Participants who moved within their neighbourhood said they fared better. They remained near to their connections, maintaining relationships and importantly their children remained at their school.

About half the participants pointed to having new neighbours that were renters and not knowing them. Only a few discussed this in terms of life stage. Young people, for example tend to rent more and I found many of those who rented tended to be of a younger age group and culturally at a different life stage, 80% of the survey respondents under 29 rented. Half the participants talked of the poor behaviour of young people renting, referencing that because they rented they did not care. Claire has lived in Merivale for two decades and has noticed the change with the increase of medium density.

Claire (Merivale): *I hardly know them even though we have lived here for 21 years, we have really good friends around, but we haven't met them because of being neighbours, but rather through school so it is quite surprising really.*

Most interviewed spoke about renting as undesirable, Flo provides a good example of how many felt.

Flo (Opawa): *The people next door said they were moving out and renting it and I was shocked so I said to others over the road and she said "there goes the neighbourhood" and two or three others have said the same.*

As renting around them increased so did their lack of trust. Two removed their names from the neighbourhood watch group as they did not want renters to have their telephone number, and so could not check when they were not at home. This occurred across the four case study suburbs and the suburbs where key informants reside across Christchurch.

Winnie (KI): *I used to know my neighbours but now we have renters and now I don't know who they are.*

Ann referenced the look and feel of the neighbourhood, in relation to renting.

Ann (Hoon Hay): *Yes, I think it does make a difference as I think people will take more care of their property, and because often when you rent you rent where you can, but where you buy you might choose because and so there is more of a reason why you want to be there when you own. Our neighbour rents and she doesn't want to be in the area but it was all she could find as her family and friends are elsewhere.*

In addition to stability within neighbourhoods, participants also spoke about renters taking less care of their properties. Opawa participants cited those within Housing NZ⁵² homes as causing trouble, creating noise and domestic problems. But at the same time, most said that these homes needed to be somewhere, and it was better as a mix rather than all together in one area. One participant explained how an old neighbour supported two neighbouring Housing NZ families by managing the behaviour of their children. She also reminded them to cut the grass and she could do this was because of the established relationships built over many years.

Losing well established neighbours was stressful and emotional for many interviewed. Three questionnaire respondents wrote over the paper their views of losing neighbours. One wanted to express her feelings strongly, she wrote and then spoke to me about how her back section in St Martins has nine homes on a driveway. Seven had changed owners since the earthquakes with three sold 'as is where is' with renters moving in. She described her lane as having greater churn especially when existing residents had not returned. She mourned the loss of her 'good old neighbours' saying she had less neighbourly energy and could not be bothered to make the effort to get to know the new neighbours, especially those renting. The lack of stability for renters was noted by many as a significant social issue, four used the word churn to describe mobility associated with renting.

Chrissie (KI): *It's the churn in tenancy that is the issue.*

Three interviewed made comment about the change in government policy around housing, specifically the shift from a home for life policy to temporary housing. Others also noted New

⁵² Housing New Zealand is a crown agent that provides housing for people in need.

Zealand's poor tenure processes and lack of facility to provide for long term renting and with that belonging to a place.

The lack of stability was also recognised as troubling for children. Key informant Libby said her biggest loss was for her son, who started his first year at high school as the earthquakes sequence began. Libby said renting for four until their damaged home was rebuilt meant that 80% of her son's secondary school education was in temporary accommodation. Her fear was about his loss of connection.

Libby (KI): *We have been renting in temporary accommodation and that has been shit and his long-term connection with home has been shit.*

Other key informants noted similar, wondering about the long term effects on children.

Helen (KI): *Friends who are teachers at the local school here and they tell you the kids in their classes who have disappeared because families have lost their rentals or have to move away to Ashburton⁵³ or more affordable places.*

Shelby works in community development and was concerned about the social issues associated with mobility and education.

Shelby (KI): *Where I live, Linwood School has a turnover of about 40% a year.....oh yes that is terrible.*

6.4.7 Loss and belonging

Many interviewed described the loss of places that mattered to them. Gawith (2011) describes a collective community-wide processing of loss adjustment and grief for Christchurch residents. Fifteen participants were in tears when discussing what was lost, often in the context of knowing others who had lost more.

Susie (Hoon Hay): *We have all lost something.*

Participants referred to financial and material loss, loss of neighbours and community, the city centre, landmarks and especially the routines of their normal daily life, including their routines associated with places. Helen tearfully told me of a friend who she felt, in her words, as had 'lost so much'.

⁵³ Rural town 85km south of Christchurch.

Helen (KI): *My friend lived in a street with the same name because his grandfather built the houses there, this was red-zoned and all traces are now gone of his life, his primary school, his high school, his scout den, his grandparent's home, the places he played, everything has been removed and all are gone.*

At the time of the interviews parts of the red zoned land in the east of the city was still being cleared. Two participants and two key informants felt that the removal of buildings and trees from this land was a deliberate attempt to reduce the emotional attachment to place. They spoke in the context of the removal of homes so pre-existing suburbs would be now unidentifiable. There is no evidence for this and during the informal interviews CERA staff spoke of the careful clearing of dangerous trees and buildings from the red zone. Little research has been done on the loss of place following a disaster. Most literature refers to a post war or dynamic social change associated with migration (Lewicka, 2008).

The relevance of the central city was important to all but three participants. Two were relatively new to the city and one did not go into the central city prior to the earthquakes. These three participants live in Hoon Hay, a more traditional suburb. All participants from Phillipstown, Merivale and Opawa discussed the loss of the city and landmarks; they missed the buildings, routine of meeting friends, the places to go and the sense of identity associated with the city. Heins (2015) by contrast interviewed new suburban residents in greater Christchurch found few participants had an affinity with or felt the draw of the central city. Some avoided the central city completely and her participant's perceptions were overwhelmingly negative. Like Hoon Hay, this may reflect the compositional make up of neighbourhoods.

With the central city surrounded by a cordon for years, participants discussed the only available shopping was in suburban malls. Few interviewed enjoyed this experience. Participants avoided shopping in the malls and missed the smaller individual shops of the central city. Participants noted that malls are the same over much of the world. Opawa and Merivale residents were happy the Tannery was available as an alternative. Merivale and Phillipstown residents both referenced their shopping malls as local and of a personal scale that still retain locally owned shops. Again, the findings here differed from Heins (2015), where her participants chose to shop in malls, including their supermarket shopping. More research is needed to test the personal drivers between the desire to live in new suburban compared to inner city existing established housing.

The central city was also missed for the social interaction and activity after the earthquakes. Debs was one of the many who described this.

Debs (Hoon Hay): *I do miss the central city, (tearful) I was in a car and talking to Pete about how much I miss it and I feel very sad. I miss it so much I don't know if I miss it or it is just the loss and the anguish that goes around it and the loss for the people who lost things there (wiping her tears).*

Researcher: *Do you feel the central city is part of your place?*

Debs (Hoon Hay): *Yes, and silly things like the strip, like the rituals of Friday before Christmas for lunch with the girls and shopping and Christmas eve at the Dux, all those familiar things, our normal routines, we did over the years. And when people come back to town now, there are not those places to go that you are familiar with. You don't bang into others so much anymore. We have all become more insular because of this because going out is different now too. I haven't been out to eat a meal or anything and that is nearly five years gone.*

As I write this, six years later in 2017, employment is starting to return to the central city and Christchurch residents are also starting to socialise there. Many of the tearful moments during the interviews related to the loss of the central city. The views of Flo and Carole were commonly held.

Flo (Opawa): *I got out at the car park and the tears were just pouring down my cheeks and I don't know what was happening to me, you feel a bit of a dick really. The tears came and I wasn't making a noise so I don't know where it all came from (in tears).*

Carole (Opawa): *I weep every time I go in to the central city, the landmarks are all gone, my favourite places.*

As Ruth discovered even small things can matter.

Ruth KI: *I remember visiting an older woman in Bromley and it was winter and she didn't have heating but she did have a box of all broken china. I asked if she needed help with her insurance claim but she had done that. The box was all that was left of her wedding presents and she was going to keep it. It is the emotional attachment that people lost that was very significant.*

Many interviewed spoke of friends and family who had difficulty leaving their old homes for newly rebuilt ones because of the attachment and the potential to lose memories.

Ruth KI: *I have a friend whose husband was killed in the February quake, their house is what she has as a bit of him and doesn't want a new one. She just wants her old house.*

Andre Lovett (Radio NZ 04/09/16) Chair of Regenerate Christchurch⁵⁴ in a conversation on Radio NZ spoke of the loss of landmarks, the loss of what had been part of residents' lives. At the re-opening of the heritage Great Hall in the Art Centre, he said he had never seen so much collective weeping. Lovett noted that the Art Centre is scheduled to be completed at the end of 2019. This is a long time to be without well used and well-loved heritage buildings. Claire like others felt let down by the slowness of the rebuild.

Claire (Merivale): *The government has stepped away from us here and people have no idea and they say 'I suppose you are all fixed now' or they say 'were you affected' and I say everyone in Christchurch was affected.*

Participants and key informants said they knew, or worked with people in the least affected parts of the city who would say that the earthquakes did not affect them. Those interviewed expressed disbelief over such comments given many still worked out of temporary buildings or at least had to deal with traffic congestion. All agreed, there was a sense they could not complain knowing the situation for many in the East was still difficult, with damaged roads, little social infrastructure and insurance issues. It is not uncommon for people who did not experience personal loss or damage after a disaster to feel a sense of guilt (Silver & Grek-Martin, 2015). Libby was very clear about her response to comments like these.

Libby (KI): *I say bloody yes it did affect you, what about your social life, what about Victoria Street or High Street and the loss of places to go.*

Loss also extended into the personal lives of most interviewed. Participants lost employment and three talked of the transience of their lives since that time. There was still uncertainty of what was going to come next as noted by Margie.

Margie (Opawa): *Because I lost my job I like it seems there is nothing permanent and everything is always in transition.*

Four participants talked about the new people coming in to the city to work, how this had made life more difficult and had changed their feelings for Christchurch.

⁵⁴ Regenerate Christchurch is a new joint crown council entity established in 2016 to lead the regeneration of Christchurch. <http://www.regeneratechristchurch.nz/about-us/>

June (Hoon Hay): *I was born and raised here and the people have come here have increased the costs of living but my wages don't match, wages have not gone up and because I come from a poor background I see the worst of it.*

The new people to the city were understood to not comprehend how difficult it had been through the earthquakes and now living in a damaged city. Only a few participants talked about people not loving the city anymore and how they had been affected by people coming to Christchurch to work. They felt disconnected from those who were here to make money.

Lee (Hoon Hay): *We feel like we don't have much control at all – it is called Gerry Brownlie, government needs to step back and see what the city needs, although the damage has been done now, taking all those outsiders who don't care but want to get a job.*

Lee was the most negative of the participants but also very passionate. Lee continued to speak about the outsiders and the housing crisis aggravated by them. He was living with this mother unable to afford a flat of his own. Lee had decided not to leave as Christchurch was the place where he grew up and his friends and family were here.

Lee (Hoon Hay): *I used to have a love for this city but it has gone now, although I have had enough of this place and I don't feel much love for this place, I loved my city and I never wanted to leave but I don't know where to go.*

Others interviewed did not feel this, for them the earthquakes had cemented a sense of belonging to their part of the city, to Christchurch and for others to Canterbury.

Questionnaire respondent: *The earthquake gave me a sense of belonging here.*

Cassie (Hoon Hay): *I have learnt to love Christchurch.*

Martin (KI): *Well, it has turned me into a Cantabrian finally.*

Helen (KI): *This has become my land now.*

Many spoke of the privilege of seeing the better side of people and this has strengthened their sense of belonging to the city and the region. Winstanley et al., (2015) through interviews and survey, found similar positive experiences in Christchurch associated with a sense place. The collective memory of Christchurch still existed through the little remaining architectural traces but particularly the natural spaces. Natural places like Hagley Park and the Botanical Gardens have become more important as places that have not changed. Large trees were part of this.

6.5 Discussion and reflections

Perkins and Long (2002) put forward the proposal that social capital is to political science, sociology and community development what sense of community is to community psychology. These terms were used by key informants and participants interchangeably throughout this research. Coleman (1988) describes social capital as the norms, networks and trust of society that helps to facilitate cooperative behaviour, he focussed on community attributes. In contrast to this, sense of community has been more often measured as an individual level construct (Perkins & Long, 2002), although there have been some community level analyses (Wandersman & Chavis, 1990; Sampson, 1991; Wood et al., 2010). What is now better understood is how a sense of community, collective efficacy and participation are all a constituent of social capital. Sense of place, of neighbourhood, of community are intrinsic to social capital and the functioning and quality of community.

This research has clearly shown that the social connectedness provided by neighbourhood relationships underpinned the immediate response following each large earthquake. This social interaction has also been important through the recovery period as the normal routines of life were re-established. All interviewed recognised and discussed the different types of social activity. This activity ranged from bumping into people who live nearby who acknowledge each other, the general chatter and talking with neighbours about the weather or common daily themes. Hooper (2015) describes ‘this seeing others’ as providing a breeding ground for neighbourhood conviviality, opening the way for social connection. The second, but equally as important social activity is the purposeful meeting with others whether routine or arranged. The gathering and socialising with others outside of the home. All types of socialising were viewed as a valuable part of their lives. This social activity provided the foundation for the social connections and networks that enabled collective community action and support.

A first and simple point made by most interviewed was the continued need to have a place to talk. As outlined in Chapter 5, storytelling has been part of the recovery healing process as well as vital for getting information. Some spoke of the ritualised way conversations started in the first year following the earthquakes with ‘*where were you when it happened*’ later replaced with ‘*how is your house repair going?*’ This need to talk has continued in the intervening years, especially where residents had permission. Margie was sitting near an old fridge that had been converted into a community book swap after the earthquakes as part of a Gap Filler project, where she overheard a conversation.

Margie (Opawa): *And it was like going back in time, here were two people talking about the earthquakes and I thought how are we still talking about it – maybe it was the book cupboard that meant they could talk about it- maybe that is the place where you had permission to talk about it.*

For some a sense of belonging has been strengthened through this storytelling. Participants spoke of re-finding their neighbours through the earthquakes, experiencing a sense of attachment through the enjoyment of coming together, as well as the talking to strangers. The sharing of experiences contributed to their sense of belonging and sense of community. Myers (1962) writes of this bonding among people who experience a crisis together. This shared emotional connection is based in part on a shared history (McMillan & Chavis, 1986), in this case, the people of greater Christchurch have a history of shared experience and one that has continued over years. Shared events such as these earthquakes and the challenging times that followed has helped to facilitate a strengthening of sense of community and of place. Residents interacted with each other more and had the positive experience of helping others. Residents needed places to interact and this was provided through street typology, social infrastructure and amenity especially parks and natural spaces.

The bumping places provided the common ground for participants from different backgrounds, to support meaningful interactions. Here, I would differentiate between bumping and gathering places. Bumping places are where spontaneous, casual or informal encounters occurs with others as part of the daily routine of life. Gathering places are those places where people can actively plan to meet others. Bumping places can also be gathering places, but gathering places offer a more intentional place to meet. These were especially important for those who do not socialise within their place of employment. Others describe this relationship of people to place (Hester, 1993; Manzo, 1994; Oldenburg, 1999; Low, 2000). Bumping places such as local shops, a dairy and fish and chip shops were valued, especially for children. Hester, (1993), described these as mundane structures that provided participant's children with a sense of independence and an opportunity to leave the family home. Hooper (2015) wrote of the significance of childhood independence in the building of personal resilience for later years.

This need for such gathering places was first described by Oldenburg (1989) citing the symbolic importance of the third place is a marker of the health and vibrancy of a neighbourhood. Oldenburg (1991) wrote of the value of a dominant third place in society such as a tavern or bar, lounge or pub, or even a club house. Hickman (2013) also used Oldenburg's term third place,

describing how bumping places fulfil a social as well as functional role, that these places can change attitudes and the behaviour of residents. Third places provide significance or meaning to social interaction. As several interviewed said, that interaction could be as simple as a nod, which could give social support when needed. Most participants described how they met others in their neighbourhood through children, through the bumping a gathering around primary school, babysitting or community events. This is well described by other researchers (Grannis, 2009; Witten et al, 2007). Primary schools were one of the most recognised places, even for those without children attending school. Participants referred to schools, local parks and natural spaces, cafes or pubs and the local dairy as important places to meet others.

6.5.1 Home

Home was described by participants as offering a constancy of place that provides structure and where they could feel safe and have control of their lives. Participants first referred to their home, and then the street and neighbourhood in which their home was situated. The meaning of home can cover a range of scales and all can influence resident experience (Mee, 2007). Similarly, their sense of belonging is also constructed across these scales (Blunt & Dowling, 2006). Not being able to live at home is well researched, Dupuis and Thorns (1998) propositioned that home ownership offers ontological security. The security to carry out their normal daily or weekly routines. For many this involved simple routines of gardening or walking in the park often with a dog or children. Gardening has been described as an activity that helps to develop a sense of place (Thompson, 1994; Holmes, 2011), and relevant here as gardens are a part of the New Zealand identity (Longhurst, 2006). Other elements that directly related to home was the relationship of their home to the street. Gardner (2011) described settings such as verandas, porches, and balconies as semi-public spaces, or threshold spaces. Although these features are situated within the private realm, they open into public space. Participants recognised these as important to their understanding of their neighbourhoods, of seeing others as they walk by.

The routine activity outside of the home was also important and contributed to their sense of home at the broader scale of where they lived in the neighbourhood and within the city. Many within this study referred to being in the south of the city. Campbell (2014) also found participants in her study in east Christchurch attributed their identity, not only to their neighbourhood or to specific suburbs, but to a side of the city in this case the East. These boundaries were not fixed or well defined. She noted it was more a feeling of being in the East and this has been described elsewhere (Hubbard, Kitchen & Valentine, 2004).

6.5.2 Residential stability

This research suggests that length and stability of residency may be more important than tenure type and has been observed by others (Baum & Palmer, 2002; Carson et al., 2010). Long term, unlike short term renting, can provide a sense of security is described elsewhere (Hulse et al., 2011). Long term renters in both Phillipstown and Rowley had strong connections to their neighbourhoods and through this could help others after the earthquakes. Kearns and Parkinson (2001) found that long term residency was the mechanism that helped form familiarity and with this came benefits of belonging to community. Within Christchurch, homeowners were found to have greater motivation for social interactions with neighbours (Ancell & Thompson-Fawcett, 2008). Moving during childhood has been found to have negative effects on educational attainment, especially in the early years (Hango, 2006). This is not only problematic for the children's social and educational outcomes but can also affect their parents, as children are often the connectors for people to know their neighbours (Witten et al., 2007).

Living in the same home for a long time certainly provided an advantage. Sylvia, for example, did not socialise with her neighbour, but because of living beside him for decades she described a mutual recognition of support. Sylvia lived alone but she did not describe herself as lonely. Being alone is not necessarily bad, (Victor et al., 2000). Sylvia spoke of her routines of social activity across the week and the well-established relationships with her neighbours. Other women interviewed who lived alone, whether having never married, divorced or widowed had long standing local relationships, especially in Phillipstown and Rowley. As long-term renters, they had good social connections and networks supported by this longevity of tenure. Attachment to neighbours has been found to increase in intensity over time, especially for older people (Wiles et al., 2009).

Participants discussed the importance of established routines around their homes and how the disruption following the earthquakes affected their practice and how they missed them. Padgett (2007) wrote of the benefits of having a home providing security as important to recovery following a disaster. In a study of red zoned Christchurch residents who had to leave their homes described the loss of control and how this affected their personal identity, memory of home and their ability to create a new home Campbell (2014). Although it is not clear whether renting or owning is better (Hawkins & Maurer, 2012) what is important is the constancy of a safe place around which residents can build individual and community identities through the routines of daily life (Dupuis & Thorns, 1998; Padgett, 2007). Four spoke of the loss of routine on the lives of

elderly family members. A recent study examined the association between earthquakes and cognitive decline after a disaster (Hikichi et al., 2016). Dislocation to home and neighbourhood, the unfamiliarity of new surroundings causes disorientation and cognitive decline. Elderly people are typically less likely to be in employment, therefore, at risk of senility or dementia, or social withdrawal after a disaster (Aldrich & Kiyota, 2017). Continuing the routines of engagement with others and seeing others is beneficial. The literature links ontological security to home, but it is just one contributing factor. There is also a place for reliability of social activities and the value of continuity of community (Hawkins & Maurer, 2011).

As described throughout the results chapters, the transience and mobility of short term renting was negatively associated with sense of community. Medium density areas of Phillipstown and Merivale were said to have less sense of community than the lower density parts. Having a higher number of renters than home owners may play a part in this. But participants also wondered if the less interaction of neighbours in these medium density style developments was due to reduced neighbourhood visibility. The design and layout of these homes is for privacy and not to the street. High rates of mobility combined with this house design may affect the perception of neighbourhood. Not knowing neighbours affected the reputation of parts of neighbourhoods across all suburbs. Elsewhere mobility has been noted to affect social integration and support networks reducing a sense of belonging and community participation (Colic-Peisker, 2012). Further research is needed with more objective measures. Woods et al., (2010) noted there is less trust when it is difficult to understand who belongs, who is not local although they also reported that the evidence is mixed relating longevity of residency with social capital. Age was a predictor of residential mobility in this study, respondents within the 20-29 age group had moved most, including renters with children. Howley (2009) found similar, over a five-year period under 29-year olds were twice more likely to move than the over 29 age groups.

6.5.3 Role of place

Features of place can be unique through architecture, history or as participants described through natural features like Hagley Park and large trees. Twiggers-Ross and Uzzell (1996) refer to such places as having place related distinctiveness. At the same time a sense of belonging to a place can be through similarity such as neighbourhood and being close to others. The social attachment is about belonging to a neighbourhood and the familiarity for those who live near. And this has been related to length of residency especially through ownership (Uzzell et al., 2002).

Weeping for what was lost was a strong theme here and has been described by others (Low & Altman, 1992), the attachment of residents to public places, to natural features and even down to specific trees. Winstanley et al., (2015) found similar. Hagley and Hillmorton Parks, although less natural were favoured by those living nearby, these are of large enough scale to provide a sense of naturalness and to be able to wander. All form a part of the routine of life. Participants also described their loss from small things such as second-hand book shops to large heritage buildings and the places they met and socialised with others. Place and memory have their own distinctiveness. Place identity refers to the bonds that people have for place and these bonds can be for many different things. Spending time in a neighbourhood was shown to help participants feel like they belong, the knowing others contributed to their sense of belonging and wellbeing. This was about been seen in the neighbourhood, of walking and talking in neighbourhood whether meeting in the park or at the school gate. These all helped to develop a sense of place.

6.6 Chapter summary

Much of what is described in this chapter dovetails with what is presented in Chapter 5 where the theory of disaster highlights the importance of resources such as social capital through social connections and networks that contribute to resilience. This chapter continues this dialogue underlining how the form of the built environment helps to build a sense of belonging and attachment to the home place. Features of the built environment encourage social bumping and gathering. Well-defined geography, quality natural places, a primary school, and places for people to meet results in attachment to place while also creating stronger affiliation among residents.

Participant neighbourhood descriptions showed they could identify specific features of their neighbourhood and suburbs well. Local was more important for participants living in Phillipstown, whose activity spaces were mostly centred within or near their suburb. It is also the suburb offering the least social infrastructure. Participants from Merivale and Opawa use more of the city for their activity space, including their social activity. For all suburbs sense of place started with home as the place that is the centre of their physical and emotional lives. This was emphasised for participants who had to leave and move into a different suburb while their homes underwent earthquake repairs. Home was part of their community, in the local sense, but also as living in the broader context of the south of the city.

Age played a role in attachment to neighbourhood. The young and renters were not so rooted to where they lived. A desire for constancy grew with age and especially where children were

attending local preschool or school. The majority preferred home owners living near to them. Long-term tenancy increased a sense of trust and was noted as important for the development of relationships for adults and children. Stability of home provides benefits to the whole community improving the landscape of neighbourhoods. Residential longevity increased and in many cases strengthened the social connectedness and networks.

Features of the built and natural environments were important from the place around home and what was accessible from home. Street typology contributed to how participants could see and bump into others. Participants living in cul de sacs and laneways had stronger neighbourly connections, as did those in well-defined suburbs with a centre or hub. Social infrastructure such as a school was a significant contributor to social connections and enabled individuals to be embedded within their communities. Communities form and maintain their connections around these social hubs. Neighbourhood or local social infrastructure such as shops, cafes, and local libraries, pools and recreational spaces were all described as important. Also of significance was the quality of local accessible natural spaces providing opportunities to have time alone to reflect, but also to mingle or bump into others. These were significant for the daily routines of walking and wandering, taking time to reflect and to meet others especially for those with access to natural places all contribute to developing a sense of place.

In the next chapter I turn to an exploration of how the findings from Chapter 5 and this chapter can help to enhance our understanding of how we can work toward planning for more resilient communities.

Chapter 7: Discussion - Planning for resilient communities

7.1 Introduction

This chapter brings together the findings from the two previous results chapters. The aim is to describe and then explain the features of neighbourhood that helped to underpin the observed self-help and collective action that enabled neighbourhoods to be more resilient. First, is a brief review of what was found in Chapter 5 exploring and describing the community response across city and case study suburbs. Next this chapter outlines what was found in Chapter 6, the principal features of the built environment and social infrastructure that help to facilitate social connections and networks. These are then brought together within a conceptual framework. Finally, I discuss how the findings fit into the current planning and civil defence structure.

What has been found in Chapter 5 reflects the earlier literature investigating resilience following the Canterbury earthquake sequence (Thornley et al., 2013, 2015; Yanicki, 2013). These demonstrate that pre-existing social connectedness was essential for supporting and enabling neighbourhoods to respond. What this research has added is the significance of specific features of the built and natural environment that help to build these social connections and networks and in turn contribute to community resilience.

A line from a Māori proverb or whakataukī was used by five interviewed as a way of summing up what they understood about the response. *He tangata, he tangata, he tangata, it is people, it is people, it is people.* The context of the full whakataukī provides a deeper meaning. It uses the metaphor of the flax bush where people are likened to the central shoot of the bush. Flax represents the world of families within families and the connection between people and the environment for the next generation.

Unuhia te rito o te harakeke, kei hea te kōmako e kō?
Ui mai ki ahau, ‘He aha te mea nui o te Ao?’ Māku e kī atu ‘
‘He tangata, he tangata, he tangata.’

If you remove the central shoot of the flax bush, where will the bellbird find rest?
If you were to ask me, ‘What is the most important thing in the world?’ I would reply,
‘It is people, it is people, it is people.’

All interviewed recognised the importance of family and friends and of knowing others who live nearby. These social connections provided the foundation for the response and needed to be in place prior to the disaster. As described by Aldrich (2012), the strong neighbourhood responses

were driven by bonding, bridging and linking social capital. Being well connected was essential and knowing others who were well connected or who had links to resources and decision makers. The resources and information were then shared.

Disasters, such as resulted from these earthquakes, provide a natural experiment to study non-institutionalised group behaviour. As described by Weller and Quarantelli (1973), this underlying positive and collective behaviour helps to contribute to a broader understanding of community and society. Heightened altruism (Dynes, 1994; Kaniasty & Norris, 1995) was witnessed in all suburbs throughout this study. Disasters accentuate what people value and most interviewed were very aware of and valued the positive collective behaviour, the helping within and across suburbs. Some suburbs, however, exhibited greater collective action. These suburbs had specific features of the natural and built environment in common: well defined geography or boundaries, quality natural places and social infrastructure. They also had a community hub and/or centre and pre-existing community development programmes or community groups that focused on community participation and leadership. Emergent leadership through such groups is well observed in the disaster literature (Stallings & Quarantelli, 1985).

Chapter 6 showed these very same features contribute positively to everyday life. Suburbs with specific features such as walkable access to social infrastructure and the natural environment, along with sociable street morphology contribute to a sense of belonging and a sense of place. These features create places where people can meet and greet others as they pass, or where people can see and bump into others. Gathering places such as a school, community house, local café or pub enable active social interaction for the everyday and that can be utilised when needed. Their importance was further highlighted where buildings had been demolished or had become uninhabitable and in suburbs with none of these. This chapter also discussed the importance of stability of home, where home is connected to those living near and contributes to a sense of belonging to place.

7.2 Connecting the findings to a resilience framework

Over the past decade, the literature emphasises the role of the social sphere through the response and recovery phases after a disaster, with most focusing on social and economic frameworks (Wickes et al., 2010). The understanding of the role of social capital as underpinning resilient communities has strengthened (Aldrich, 2010; 2012). The research, however, does not go much further than to recognise that social capital is important. Little attention has been directed toward understanding the determinants of social capital at the neighbourhood level in relation to

resilience. This role of place, of neighbourhood, as a determinant of resilience is only just developing. And this research shows that some neighbourhoods after the Canterbury earthquakes were more socially connected and cohesive than others, where residents exhibited an ability to collectively manage and adapt to the changed circumstances.

While there is some agreement among social scientists on what this community resilience looks like, this self-help, collective action and adaptation, less is known on how it forms. Partly this is because as Norris et al., (2008) note, resilience represents something intrinsic within communities. Bringing together the complexity of the building blocks of community resilience under one theory is inherently problematic. One difficulty is that the structural, political, behavioural, individual and place attributes of a community are all connected. Also, the adaptive capacity required of a community to respond to the extraordinarily different situations or stressors vary widely. Each stressor is different through magnitude as well as spatial and temporal dimensions. The result of this is that research has tended to focus on one or two specific elements.

The four networked resources as outlined in the model provided by Norris et al., (2008) (see Chapter 2) were central to understanding resilience in this research. First, economic development takes in broader economic decision making and how social resources are distributed by central and local government and private business in relation to risk and vulnerability to hazard. Multiple institutions also determine the quality and placement of economic resources through business and commercial activity.

Second, information and communication were important from multiple perspectives. Institutional information provided access to resources and support as part of the broader response and this was communicated where possible to meet resident needs. At an individual and local level, communication supported the need to participate and to share narratives for personal and local benefit, information was important in the ability to adapt, places to meet socialise and talk. The third, community competence was exhibited through leadership, adaptation to the altered circumstances where interviewees showed problem solving, flexibility, creativity and action. Finally, social capital, the bonding, bridging and linking social connections and ties well described through this research. Local support through community organisations and associations, leadership were the drivers for collective action.

Place is conceptually included in the Adaptive Capacity Model through these resources, for example, attachment to place and sense of community both contribute the development of social capital (although the diagram shows the arrows pointing outward). The role of place in resilience

tends to not feature as a determinant of resource allocation or collective action. This model does not delve deeply enough into the role of place in contributing to resilience. My findings indicate that these networked capacities or resources are mutually constitutive with place based factors, that is place is an essential determinant of community resilience. Added to this, sufficient reference is not given to understanding the role of the socio-political framework and structures of society. Although the model does reference economic development it is not clear as to what this means. Institutional decision making on health, housing, transport for example influence the built environment and social factors. A simple diagram can explain this association.

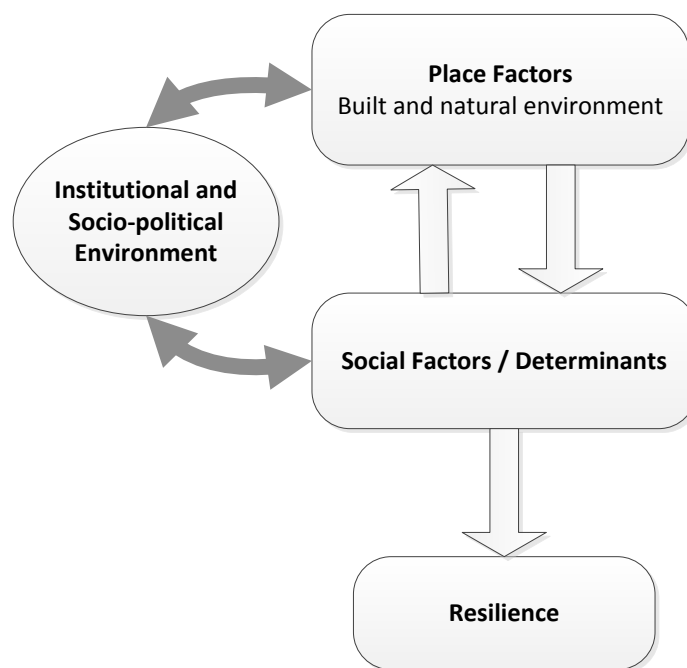


Figure 7.2: Relationship among place, social and institutional factors and resilience

To take this further, I would like to take the findings from this thesis into a stronger place based conceptual framework. Here the emphasis is on the role of place as underpinning those social factors. Having read widely across the literature, I kept coming back to health and place as an explanation for resilience. This research, therefore, takes this model further into a health and place framework. The relationship between place and health, and wellbeing is used here because the same attributes described in the health literature contribute to building community resilience. Health outcomes are influenced by the same neighbourhood attributes that influence communities to be more resilient.

7.3 Making links to a health and place framework

Over the past decade, the literature has placed greater focus on understanding the association between place and good health, of physical and mental health, and wellbeing. Bernard et al.,

(2007) provide a comprehensive list relating to place of residence and health outcomes. The common factor, however, is that some neighbourhoods are healthier to live in than others (Macintyre & Ellaway, 2000; Ellaway & Macintyre, 2004; Diez-Roux et al., 2001). Healthy and happy people have been found to use their neighbourhoods well (Hooper, 2015). While health and place are the primary reference, these same attributes are associated with contributing to more socially sustainable communities (Dempsey et al., 2011; Baldwin & King, 2017). Community and environmental psychology research also explores this relationship between the lived experience in a place and attitudes, behaviour and feelings (Tuan, 1974; Altman & Low, 1992). More specifically defined is the role of place meaning and place attachment (Manzo & Perkins, 2006) and how this contributes to community development concepts of social capital and a sense of community (Flora & Flora, 1996; Perkins & Long, 2002).

One of the first distinctions relating to health and place to explain differences among neighbourhood relates to compositional and contextual elements (Macintyre et al., 2002). The first matter relates to composition, the people that make up a neighbourhood. People are not randomly distributed across and within neighbourhoods (Macintyre et al., 2002). The pattern of how people are dispersed is the result of a suite of personal decisions, some of which are based on personal norms, values and for many, affordability. Added to this, where people choose to live may also not be fully purposeful, that is, people may not be rational or cognisant in their decision making. Residential choice studies indicate that multiple factors are involved in the process on where people choose to live (Mulder, 2007; van Ham & Feijten, 2008; Feijten et al., 2008; Eliasson, 2010; Lee & Waddell, 2010). Locally, Heins (2015) demonstrated that decisions on where to live are based on partial information, the prioritising of selected personal and social drivers. Some of the findings of this research show similar trends. While I did not ask a question about how participants chose their place of residence, many reflected on this as part of their response to what they valued about where they live. Participants described how they actively chose to live on or near the hills, the river or close to family and friends. For some it was about familiarity of place and where they grew up. Two thirds of key informants actively chose to live near the coast or the Port Hills.

Separating out the attributes or values of how individuals select where to live is complex. The question remains why do people choose to live in specific suburbs - are they more sociable, focus on selected features, less socially conforming or more focused on opportunities? It is most likely a combination of both choice (when they have the financial ability to choose) and chance of what is available to meet taste, needs and personal drivers at the time (Mulder, 2007). Switzer and

Taylor (1983) explored intra and inter-determinants of sociability versus privacy in the residential choices of college students. Those who developed more extensive local social networks had chosen to live in more sociable environments. Both Rodgers et al., (2011) and Leyden (2003) showed that the more conservative people wish to walk less and the more liberally minded who are more open to meeting others, wish to live in older and therefore more walkable neighbourhoods. This is discussed later in this chapter.

The next three sections discuss the features important to the resilience of community. The first takes this compositional notion further, and then is followed by the context of the built environment and then the socio-institutional context.

7.4 Compositional features

This section reviews what I can of the compositional features of participants. This study did not seek to analyse the psychological traits or drivers of participants. All participants completed the questionnaire and it did include questions on a few personal attributes, asking if they were sociable or if bumping into others was important. Participants also provided answers during the interviews that could be described as fulfilling their psychological needs, of communing within natural settings, of needing to talk (or not) and to be with others.

7.4.1 Individual characteristics

The demographic makeup of each suburb is different, but not as different as other international studies carried out in disaster contexts. A significant portion of the disaster literature originates from within the United States or developing nations where segregation is greater across many variables: race, class, income and migrant groups. New Zealand by contrast is less socially and economically diverse. Of the case study suburbs, Opawa and Hoon Hay were the least diverse. Phillipstown is the most ethnically diverse but economically the least.

Most interviewed were very clear that vulnerable people live across neighbourhoods in both deprived and affluent neighbourhoods. Participants from the more deprived neighbourhoods within each case study suburb showed both individual and collective effort to provide support to those in need. Three of the most able people interviewed were among the least affluent, living in some of the most deprived parts of Christchurch and who under most circumstances would be labelled as vulnerable. Their responses following the earthquake indicated their vulnerability was mitigated by their personal attributes and experience of having to manage and cope. Participants in Phillipstown and the social housing areas of Opawa and Hoon Hay recognised they needed to cope and self-manage because they had to, even during normal times. One key informant said,

‘They often have the rug pulled out from under their feet’ and so had learnt to manage. They could also cope through access to their pre-existing social connections and community development processes including local community groups. Fjord (2010) reiterates that rather than focusing on vulnerability, the focus should be on community-based organisations that help to promote resilience within communities. Phillipstown and Rowley are both good examples of where directed community development programmes of Council are linked to broader support, for example from the NZ Police. Elderly people and renters were identified by key informants as the most vulnerable. Key informants also described how vulnerability occurred within the broader community months later, with residents struggling to deal with their loss of routines, or the complexity of house insurance.

Individual traits, within the psychosocial models of resilience show that personal traits such as extraversion can be linked to positive individual outcomes (Campbell-Sills et al., 2006). When a stressor, such as this disaster is applied, these traits may become a protective factor or provide a resilience resource (Richards, 2016). Self-efficacy, having hope and coping well were all characteristics identified as important to resilience (Luthans et al., 2006). Research into workplace situations note these traits also enable people to manage stressful environments (Gillespie, Chaboyer & Wallis, 2007). These same traits were discussed widely by key informants and participants during the interviews. Those interviewed described the vulnerable as those who liked to have control over all parts of their lives. The vulnerable were not flexible or open to the changing circumstances. Fjord (2010) described this, stating that vulnerability and vulnerable people are different. She used vulnerability as the concept to explain why certain people experience harm within everyday social environments as well as a disaster context. Fjord (2010) and this research identified vulnerable people were those who lack the physical, emotional, cognitive or social resources to continue to function.

With the earthquakes as a major stressor, social connections and networks provided psychological support. Fergusson et al., (2014; 2015) reported on a longitudinal study of a cohort of 30-year-old Christchurch residents. They noted supportive community action was a protective factor for mental health outcomes. Groups affected by the earthquakes who would normally be described as vulnerable, such as the socially disadvantaged or women with dependent children, were no more likely to have increased mental health issues when they had access to collective social support.

Having hope and seeing a way to manage was important. Participants described knowing they could manage because they had skills, experience and knowledge. Some people took a problem-

solving attitude that provided a sense of control, evaluated the situation and worked toward adapting to the loss of infrastructure. Residents drew on their individual and their collective resources to cope and manage. This was also noted by Yanicki (2013). Like Mamula-Seadon et al., (2012), I found the most resourceful were those who had experience of the outdoors, who had been involved in leadership or in voluntary community and service organisations such as St John. Like many New Zealanders, some interviewed had previously travelled independently overseas and they said this had helped to develop a measure of resourcefulness. These same participants spoke of being drawn to living near the hills or to natural features and were well connected to their place.

7.4.2 Leadership Characteristics

Pre-existing and emergent leadership by individuals within neighbourhoods was also an important characteristic found. The earthquakes provided an opportunity for those who had an ability to take the lead. Individual characteristics are important in leadership and maybe a function of participant's genetic and life histories (Arvey et al., 2006). Key informants discussed the various leader attributes, also noted by Mamula-Seadon et al., (2012). Leaders were observed to be well connected, had local knowledge and had a presence within their community and/or understood their community well. Personality traits also played a part. Those taking a leadership role showed initiative, were comfortable operating within the lack of structure, were strategic and importantly were happy to break the rules to obtain positive outcomes.

Some emergent leadership has continued, while key informants also noted many leaders slipped back into their community once the need had lessened. The actions of a few individuals in specific suburbs like Sumner inspired other residents to volunteer their time and resources, to work with local groups or individuals on a shared interest. The focus was to maintain that latent goodwill exhibited within the community immediately following the earthquake sequence. These leaders were of all ages and many were women. Those interviewed who took on these leadership roles expressed a strong desire of attachment to their neighbourhood. They were well embedded within their neighbourhood especially through having children at the local school. Without these individuals, the collective efficacy and action seen may not have been strong. The action of one set up the welfare centre in North Beach, without Andrea, this suburb may have been left to languish until formal help arrived.

7.4.3 Social characteristics

This ability to lead was supported through both weak and strong social connections and networks. Within this study, I found the importance of both bonding and bridging ties to be valuable. Bonding ties among neighbours and families were important in those first days. And then as the response and recovery proceeded, bridging ties assisted with gaining access to resources and information. Individuals who emerged as leaders and who were identified by others for me to interview, all had strong secondary or bridging ties. These individuals were connected across employment and relational organisations and more importantly, through social infrastructure such as pre-schools, primary schools and community organisations, including churches.

Most participants in this research described their need to participate in the response and recovery efforts. With the loss of their usual routines, the practices of normal everyday life, helping through the earthquake period gave participants purpose and meaning. Helping gave comfort by providing a temporary source of normative behaviour across social settings. They used this time and their social connections to participate in the clean-up and response activities. Participants discussed at length the good feeling associated with participating and providing resources. Many described feeling empowered by the general goodwill and willingness to help. Their helping gave a sense of having things under control. Kaplan & Kaplan (2003) describe this as part of their Reasonable Person Model, where this meaningful action helps reduce the harmful effects of feeling helpless and needing to have control in certain circumstances. People may not desire the responsibility that comes with control, but they wish to have things under control. Participation with others as part of the clean-up alleviated their sense of helplessness, where being affective is akin to being adaptive. This is consistent with reward and good feeling that comes from volunteering and helping others (Borgonovi, 2008; Chang, 2009). It is well described within the disaster setting (Solnit, 2009). They were able to help because of the bonding and bridging ties built up through where they live.

7.5 Contextual features

This section now turns to the contextual features of place to provide an explanation of what contributes to resilient communities. Context involved a range of features from the built environment through to socio-structural features. Macintyre and Ellaway (2000, 2003) describe how features of the physical neighbourhood are shared by all who live there. Those relating to the built environment include:

- geographical definition,

- the general quality of place as it relates to the built environment,
- environments that support healthy lifestyles and access to natural spaces,
- local quality social services and infrastructure,
- socio-cultural features that reflect the neighbourhood history and reputation or desire of others to live there.

These very same features were important to this study. The following discussion explains how each of these is central in enabling the self-help and collective action observed following the earthquake sequences.

7.5.1 Geographical definition

Through both Chapters 5 and 6 the significance of geographical definition was repeated. First, because suburbs that are well demarcated or distinct made it easier to rally a response within the known boundaries. Second, this distinction is also a component of the general quality of place, where it is important as part of the understanding of the place where people live. Giving a name to a place provides place identity and enables a sense of belonging (Lewicka, 2008). Places first identified by key informants as having strong collective action are all very well defined by their geography. These suburbs are separated from others by natural features, by the coast, rivers or the Port Hills. Aranui was also observed to manage through community development programmes and like Merivale and Phillipstown, is well defined and well understood through socially constructed borders. These sociocultural boundaries also enabled formal institutions to help residents as needed.

Densem (1973) describes how many Christchurch suburbs lack a clear identity, particularly for the suburban mass. His thesis pointed to those established post war suburbs as having a lack of personality, with similar unrelieved single storey housing and few places that focus on community or amenity. A house on a post-war street could be in many parts of the city. Large parts of Hoon Hay would fit this description, as do North Beach and Shirley all identified as lacking collective resident action. Fortunately, a large local church in Hoon Hay provided support across parts of the less defined parts of that suburb.

7.5.2 Quality of place, the built environment

Quality of place can start with home and is the centre of resident's physical lives. Home and local neighbourhood was very important during the time of the earthquakes and the years that followed. Many participants reflected on how homes have changed. Houses in new subdivisions, or rebuilt in the case study suburbs, have improved in quality for general health but not for connection to

the street. Participants noted differences, especially the lack of connection of new homes compared to their homes in older style suburbs. Comparisons were enabled by those who had moved into new areas while their homes were rebuilt or repaired and through family and friends. The features observed were sections are smaller and fenced to block the view to neighbours, and with garages toward the front of a house. With this comes a loss of threshold spaces of verandas and porches and with that connection to the street. Three interviewed who were displaced for years in a new subdivision spoke of having to actively seek out their neighbours because bumping into neighbours was hard. Southworth & Owen (1993) write of these same changes and the privatisation of space within subdivisions across the United States.

Street morphology

Street morphology was also a key feature to how well neighbours interacted socially. There were noticeable differences in descriptions of relationships among participants living in the different street typologies. Close and cooperative behaviour was described in cul de sacs and in shared lanes. Mayo (1979) studied what he termed neighbouring behaviour on straight, curved and dead end streets, which included cul de sacs. The latter was found to have greater levels of neighbouring, although he attributed this to fewer people living within cul de sacs. Brown & Werner (1985) also found street form, especially cul de sacs, was positively associated with attachment and territoriality.

Urban design approaches that have fed into planning culture discuss the need for grid pattern streets to provide more walkable, community friendly designs, particularly to reduce the use of cars for everyday activities (Wood et al., 2008). Few discuss the value of intimate living environments created by cul de sacs and lanes, both now out of favour among planners as a dominant street form (Southworth & Ben-Joseph, 2004). Participants of this study with children valued the opportunity cul de sacs and lanes provided for their children to play independently near their home. Heins (2015) in her Christchurch study of residential choice for new subdivisions found street type was considered by seven of the 28 households interviewed. Three specifically desired a cul de sac because they said it provided safety from traffic and they wanted a community feel. Her participants spoke of the ease of getting to know and seeing neighbours and cul de sacs were referred to as an intentional destination. Streets have been described as this mediator between the wider community and the private world of home and family (Appleyard, 1984), also as a place where children can learn about the world (Grannis, 2009; Hooper, 2015). A third of participants

felt their children did not play as freely as they had. Those living on lanes valued them for this quality.

Living in a cul de sac may not influence people to be more sociable or to socialise with their neighbours, but may help to facilitate individual tendencies in that direction (Brown & Werner, 1985). Residents do not need to actively seek out neighbours because they are close. In a study of high-rise buildings, residents who live in close functional proximity were shown to become friends (Bochner et al., 1976). Proximity to neighbours was shown in this research to contribute to neighbourhood sociability and with that close cooperative behaviour and support after the earthquakes.

Street width

Participants living on wide streets tended to know fewer residents across the road than those living on a narrow street. This was more obvious for participants living on busy roads or where there was fast moving traffic. Wide streets overlook the experiential quality and the social elements of residential living. This is well described by Appleyard (1973), who wrote that street width is important to a perception of scale and how destinations feel. Street patterns that divide also influence neighbourhood movement and interactions. Little has changed since Southworth and Owen (1993) attempted to address the gap in understanding of the quality, character and organisational patterns of traditional car-dominated subdivisions. They state this urban morphology did not happen without planning or underlying rules. They explained that large vested interests of land developers combined with planners, adopted subdivision zoning and engineering standards for streets and infrastructure that directed a market preference for low density oriented for car use. Street width within Christchurch subdivisions from the 1950s and 1960s onwards fall within this pattern. Older established suburbs like Phillipstown, parts of Opawa and especially Merivale, still contain some historical narrow streets. Residents on these streets valued the intimacy they evoked.

Wide streets roads and road reserves also take up significant space. Council subdivision standards follow the NZ Standard NZS4404, which is more concerned with safety and connectivity of the network than the social dimensions. A cursory review of selected New Zealand council subdivision standards show they state they conform to sustainable development and modern liveable design. I would disagree. Codes for land development and subdivision engineering provide minimum widths for suburban and minor access roads of between 20 - 24 metres. I asked three traffic engineers why so wide. All agreed that wide streets are likely the result of the

unintended consequence of decisions made for a specific traffic risk. The width is possibly based on a premise of meeting the law of probability, for example, of a rubbish truck and emergency vehicle being able to pass between parked cars. Perhaps the application should focus on the chance of two vehicles needing to pass two parked cars rather than the risk of this occurring. This is not only an issue for separating residents and reducing sociability, but also for increasing infrastructure costs. Costs increase as infrastructure services such as wastewater and roading are spread wide. At the same time delivering greater hard and impervious surface that is more expensive for stormwater management and public transport. The practical implication is that developable land is given up for roads that could otherwise be used for green or community space.

A centre or central hub

A significant feature relating to the quality of place helping to drive community capacity was having a central location for people to gather and organise a local response. The central location or centre could be a park or school, active church or a community facility. Individuals understood this need, for example, a New Brighton café owner deliberately provided a place for people to meet that enabled a response to be mobilised. Communities also tend to be more resilient when normal routines can be reinstated, for example, the routine rituals of neighbours gathering or suburb celebrations (Abramowitz, 2005). Without a centre or a meeting place it is not possible to assemble. Merivale and Opawa, both small older hamlets subsumed into the city have maintained their centres and like Sumner and Lyttelton also with clear centres enjoyed celebrations as part of the earthquake recovery process. These badly damaged suburbs used early gathering initiatives in creative spaces so people could come together to talk and capture ideas to activate community. Merivale restaurants, cafes and pubs were valued as places to meet for residents with the cordon around the central city. Thornley et al., (2015) also noted the importance of opportunities for people to come together and talk.

7.5.3 Environment to support healthy lifestyles

As discussed above, the built environment can connect a neighbourhood through street patterns to be more walkable (Southworth & Owen, 1993) helping to enhance walkability for physical activity (Saelens et al., 2003) and for walking to places. Participants valued highly their ability to walk to natural places, to socialise and for reflective time. Walking to these places was preferred by all. Merivale and Phillipstown are walkable to many destinations because of their proximity to the central city, while Opawa and parts of Hoon Hay are walkable to the natural environment. Walkability is linked to quality of life and walkable neighbourhoods promote interactions among

neighbours (Lund, 2003). Having places to walk such as a natural space or park or local shops are associated with health and developing a sense of community (Leyden, 2003; Lund, 2002; Wood et al., 2010). This may reflect the compositional features of participants who described the need to walk and who choose to live in walkable places. Participants in this study are attached to places they walk to daily or frequently. This has been observed by others (du Toit, 2007) who also describe this self-selection, where those who value walking live in places that are more walkable (McCormack & Sheill, 2011).

Hagley Park, the coast, rivers and hills were the most valued. Merivale participants actively make a detour through Hagley Park to get to the city. Hagley Park is typical of parks built as part of the Garden City movements of the mid to late 1800s, differentiating between areas catering for sport as well as more natural places. Participants valued natural places for physical activity, such as walking the dog or playing with children. Dog walking introduced many opportunities for chance encounters. Gehl (1987) described how people engage in these different activities centred on the character of the natural or greenspace and these natural settings encourage social interaction.

Large trees were highly valued. Participants deliberately sought out mature trees to walk near. They reported that they were emotionally attached to trees and trees helped them feel connected to where they live. Trees add value as an intrinsic component of neighbourhood. Participants made comparisons between new and older suburbs and could not understand covenants placed on new subdivisions to reduce trees size. Merivale and Phillipstown participants remarked on the loss of trees to medium density housing. Natural and green spaces containing trees have been found to be crucial to the geography of place conferring multiple benefits including for social contact (Kaźmierczak, 2013). Others have noted this positive contribution of access to nature in helping to recovery from pre-existing stress (Pretty, 2004). This study showed how different types of activity carried out in greenspace influence social interactions, especially local and neighbourhood ties. This is not well examined in the literature (Kaźmierczak, 2013).

7.5.4 Local quality social infrastructure

Social connections observed within suburbs resulted from the social infrastructure in place. Quality local services included proximity to social infrastructure such as schools, council and community facilities and amenity and greenspace as above. These provided the chance everyday encounters that helped to facilitate neighbourhood sociability. Contacts were built up over time and participants who lived in the case study suburbs for longest knew many others. The importance of the everyday encounters provided by these is well described in the literature

(Grannis, 2009), including passive or serendipitous contacts (Witten et al., 2003). Social infrastructure helps residents to bump into others, where they can recognise others as local or someone who lives nearby. This recognition helped to induce a more intimate social connection among neighbours. Knowing those who live nearby can also confer health and psychosocial benefits as well as contribute to individual resilience (Carpiano & Hystad, 2011).

Local public primary schools provided inclusive community participation immediately after the earthquake and during the recovery period. Shirlaw (2014) stated that in a secular society, schools frequently represent the heart or centre of a community. In the absence of a shared religion they become important gathering places. Schools also provided constancy for children and places to talk for adults. Ironically for Phillipstown, the school closure helped to enhance the connections among the local community. Residents banded together to oppose to the Ministry of Education's decision to close the school. Subsequently, locals have participated in activities associated with the Phillipstown Hub. Pre-earthquake, Phillipstown residents had a low voter turnout compared to other suburbs (StatsNZ, 2017). With the closing of the school, efforts to engage with the community have been more successful. Key informants described how neighbours are now more connected and are more involved. Council staff initiated a fun day and over 300 people turned up, surprising staff. This event was used as an opportunity to find out how to better support the community. Those attending were asked three basic questions: what they liked about Phillipstown, did not like and what would make life more enjoyable? The community told staff of the lack of places to meet others in Phillipstown. There is no swimming pool, no supermarket, and no café open beyond mid-afternoon. The Phillipstown Community Hub at the school site has become the bumping place. Two interviewed noted the Hub had improved their perception of Phillipstown; they were now less negative.

The influence of social infrastructure and local amenity for promoting social interaction is well understood (Halpern, 1995; Sampson, 1995; Warin et al., 2000; Witten et al., 2003). The presence of neighbourhood infrastructure that enhances social interaction influences the quality of life of residents (Buonfino & Hilder, 2006). And Bach et al., (2010) and Bach (2013), described how social infrastructure enabled communities to be better connected, resulting in better preparedness. People who describe belonging to neighbourhood are more likely to be locally involved, and so to know other locals (Bihari & Ryan, 2012). It is social infrastructure that helps to make local connections and contribute to a sense of belonging. Paton and Johnston (2001) also describe that a sense of belonging and attachment to a community encourages community involvement after a disaster.

An issue relating to social infrastructure has been the shift of new council facilities from smaller and more local to large social infrastructure based on much large catchment areas. Here, the economic rationale is applied, where fewer but larger facilities are favoured to replace damaged or tired local infrastructure and local amenity. Large facilities are easier to manage and more cost effective to run. The issue with fewer and larger facilities requires residents to travel further, which is more difficult for low income individuals and families. Valued local amenities such as local pools have been hard fought for in Heathcote Valley and St Albans who are rebuilding local swimming pools through fund raising. These are not driven by council, although it does contribute. Key informants also noted this activity also brought these communities together.

The attributes of neighbourhood was less important to those in higher social positions. Participants from Phillipstown, especially those who do not drive experience life centred on where they live. Fried (2000) was clear that the overall quality of the residential environment is a strong variable influencing how people are satisfied about where they live, but this is also a function of social position. This was true for participants who work in a professional capacity, where their social experience and networks are widespread. Also for those closely attached to a specific church or whose children do or did not attend the local primary. Participants in Phillipstown and in social housing areas of Hoon Hay and Opawa generally do not travel far from their suburb. These participants had a strong sense of neighbourhood and opportunities for chance encounters were important to them. As seen in the literature groups that were more dependent on local included women on low incomes who do not drive or own a car and elderly people (Kobetz, Daniel & Earp, 2003; Robert & Li, 2001). For these groups, like those in this study having access to resources in their local area was important.

7.5.5 Sociocultural features and history /reputation

Social functioning occurs through local identity, a sense of belonging and a shared history and reputation among different groups (Bernard et al., 2007). A good example in Christchurch was the Farmy Army, where hundreds of farmers, coordinated through Federated Farmers, came from across the region bringing labour and skills to help with the earthquake response. The Student Volunteer Army has also been well described in the literature (Carlton & Mills, 2017). I found similar through political ideology. A local Member of Parliament, with local government councillors and community board members aligned to the Labour Party, organised door knocking across the less damaged and less affluent, but largely ignored parts of suburbs in the south and coastal areas of the city. After the February earthquake, Ruth and her office organised volunteers

to visit or to telephone elderly people and the less able to help sort out their immediate needs. Months and years later this contact continued, to help deal with insurance or repair issues.

Marae

This research also identified the role of Māori in the response. Not initially well reported but now featured within other research, describes how Māori structures and relationships supported local communities (Kenney et al., 2015; Phibbs et al., 2015). Lambert (2014 a, b) in papers on the experience of Māori and pre-existing cultural and social bonds states how this comes from a mix of directions. He outlines a tradition of older whānau supporting the young, mentorship in a political context of social adversity and collective identity. Kenney et al. (2015), and Phibbs, et al., (2015) all emphasise Māori cultural understanding and responsibilities in the context of a strong cultural obligation to support local community. Key informants and Phibbs et al., (2015) noted how this kaupapa as a potential strength for disaster management. Another significant earthquake occurred in Kaikōura on 14 November 2016 north of Christchurch,⁵⁵ where the marae was the centre of civil defence activities to support local community (The Press, 2016). Others writing of indigenous responses to disasters show similar patterns of support (Norenzayan & Lee, 2010). This positive action was described to me and other researchers as affirming the cultural identity and sense of place for many Ngāi Tahu. Key informants spoke of feeling proud of their response. Ngāi Tahu could and did facilitate formal links with central and local governments (Phibbs et al., 2015). Māori have a cultural obligation to support local community and this was expressed strongly many times through the interviews.

The significant resources available through Ngāi Tahu were not recognised within the emergency management structure. Civil defence has a very top down approach making it difficult to utilise services available to them. At the national level, the military style structure of command and control made it difficult to gain access to decision makers or those in charge. People were ready to help, but were turned away. There was also a lack of Māori representation within the early national disaster and preparedness response planning. Key informants described regional variability of marae elsewhere in the country working for civil defence purposes. In Christchurch, Rehua Marae (central city) and soon after Ngā Hau e Whā (East Christchurch) were open for use but a lack of understanding between civil defence and marae elders followed around their respective roles. Marae elders expected they would maintain management while working with civil defence, who in turn, expected to take full control to manage and organise. This is also

⁵⁵ <http://www.geonet.org.nz/earthquake/2016p858000>

described by Phibbs et al., (2015). Rehua Marae was opened within eight hours as a welfare and coordination centre as it had been checked and stabilised following the September 2010 earthquake. Both key informants discussed the meeting the following day on 23 February 2011 where Rehua was assigned as an Earthquake Recovery Assistance Centre. Here it was agreed that assistance would be led by TRoNT. Ngā Hau e Whā was ready a week later. Neither marae were operationalised as civil defence sector posts. Ngā Hau e Whā later became an outreach hub for some government departments, including the court system and community organisations (Phibbs et al., 2015). Kuia⁵⁶ working to support the running of Ngā Hau e Whā were said by four key informants to have both Māori and Pākehā youth, before the court, well under control. All found that amusing and were impressed by the respectful atmosphere. Iwi, especially Ngāi Tahu, hold considerable resources that can be used to support local communities at very short notice, a significant asset and resource to be called upon when needed.

Churches

Religious affiliations also provided significant value across the city (Harvey, 2012; Thornley et al., 2013; 2015). Church groups organised and supported local neighbourhoods, as well as communities outside their congregation in the more damaged suburbs. First, providing supplies and later emotional help. Hoon Hay participants described how the South West Baptist Church led a large community programme, without which many people of that suburb may have struggled. The Grace Vineyard Church and St Anne's in the north of the city were provided as examples of organisations that supported local communities; door knocking, providing food and shelter and places for residents to congregate. Key informants reported these acted as centres for information sharing. Groups such as religious or community based centres have been observed internationally by others as important anchors in a community (Chamlee-Wright & Storr 2009; Storr & Haeffele-Balch 2012).

Community organisations

Activated support and social interaction was often led by community organisations. This study supports the findings of others, such as Cretney and Gaillard (2016) who argue that already established community organisations played a role in the response. They were able to focus on the special or unique needs of their specific community. Bolin & Stanford (1998) demonstrate that pre-existing local community groups or civil society organisations can identify and support vulnerable residents and direct resources. There were many notable examples, well documented,

⁵⁶ A female elder.

in the literature after the earthquakes (Thornley et al., 2013; 2015; Yanicki, 2013). Pre-existing organisations both large and small were crucial for response and recovery processes. Bill was clear of the role of his residents' association.

Bill KI: *And so I think that helped and also because we have a long history of a residents association, we realised what that meant it felt it gave us authority and standing so we had no compunction in ringing up the mayor – Lianne, 'we need this and that'.*

Key informants spoke of the importance of pre-existing and well supported community organisations, especially if these organisations remained post-earthquake in a familiar structure and location. Most key informants cited the examples of Project Lyttelton and Aranui Community Trust Incorporated Society (ACTIS). Yanicki (2013) sums up how the residents of Aranui tended to engage with the local organisations that did not change as service providers or supported local activities. ACTIS has worked with Pacific and Māori leaders for over a decade to support local community, and has strong connections to central and local government services. This was also enabled by access to facilities. ACTIS used the local primary school as a distribution centre to provide resources and access to information. This gave a place for people to meet and be with others. Project Lyttelton had many similarities also working with local service providers. Project Lyttelton started in the 1990s and has a focus on sustainability and inclusivity (Jeffries & Everingham, 2006). The location of such groups also is important. Both ACTIS and Project Lyttelton are centrally located with direct access to a community centre, a medical centre and social services including shops and local parks. They are effectively a part of a centrally located hub.

Some community groups and many residents' associations did not provide the needed support and were described as poorly connected to their community, council and services. In the four case study suburbs, at the time of the earthquake only one had a fully functioning residents' association. Merivale Residents' Association did and continues to be active within the community. Opawa Residents' Association would come together based on need, usually to fight a development, this has continued post-earthquake. Hoon Hay Community Association was unknown to all interviewed and was considered by Council to be in abeyance. In other parts of the city, new groups emerged or transformed to replace residents' associations. Notable examples are in Sumner and Heathcote new groups helped residents connect and deal with issues, using their bridging and linking capital.

7.5.6 The institutional and socio-political environment

The institutional environment has variably been described as the political, social, and legal rules that provide the structure and foundation for production, exchange and distribution of resources (Sobel, 2002). Although not a focus of this thesis, outcomes derived from institutional and economic decisions were shown to affect local sociability and connectedness. Features of institutions that usually facilitate good outcomes are derived from social drivers that give stability and a mandate.

The literature describes a suite of social features that influence neighbourhood responses in relation to disaster. Although often provided as individual resilience to a set of circumstances, these features are not integrated into the complexity that makes up neighbourhoods. Many cross multiple domains, for example home ownership influences local sociability, and is in part the consequence of institutional and economic policy decisions. Rather than discuss each in a linear formal structure, elements that are relevant are raised here.

Stability of home

Home ownership was one of the first themes identified in the early interviews where many participants referenced differences between those renting or owning. Renting was viewed primarily in a negative context, observing the difference between longer term and short-term renting. New Zealand has traditionally had a culture of home ownership developed and protected by government policy since the early part of the last century (Dupuis & Thorns, 1998) and to which the majority are expected to desire and attain. Over the past decades, the level of home ownership has dropped (StatsNZ, 2013). The issue, however, may not be renting as such, but about an inability to secure tenure over a longer timeframe. Differences as could be expected were observed among different age groups. Younger age residents and participants in less affluent areas were more likely to rent. The young will always rent and be more mobile. Nearly half interviewed wished for fewer neighbours to be renting in their immediate surrounds and recognised that renting affected the whole community. Renters were presumed to care less about where they live and to have less interest in getting to know their neighbours, even those with children. This may be the result of high mobility and having less energy to interact with new neighbours, as discussed by some participants and respondents, not bothering to get to know renters because of the churn. Internationally, high residential mobility has been shown to encourage shallow social bonds and diminished investment in maintaining existing social ties (Oishi et al., 2013). Mobility has been noted to affect neighbourhood ties (Gillath & Keefer, 2016).

Institutional and government policy has changed over the last decades. New Zealand has poor rental tenure processes, especially outside the state social housing sector, although this has now also changed. In 2014, the Government ‘house for life’ policy came to an end, with tenants now under regular review to test if they can afford to move into a private rental situation. Martin expressed the main issue was this change in policy.

Martin (KI): *What Housing NZ is doing now is entirely opposed to a public policy response because they are using State housing as a temporary housing model, which is not going to develop social cohesion, like school closures which is the same where people move in and out and is not good for neighbourliness.*

The same shift in policy has occurred elsewhere under neoliberal governments. Both the United Kingdom and Australia has seen a similar shift from public to welfare housing (Fitzpatrick & Pawson, 2014). Similarly, New Zealand social housing has become a welfare safety net service rather than one that caters for long term housing stability with similar outcomes for tenants (Kemp, 2000). The contrast is stark. A home for life to one of a fixed period, that can be reduced to as little as monthly provides little residential security and certainly does not contribute to neighbourhood social cohesion.

Until the early 1980s, home ownership was dominant and encouraged by government through backing mortgage schemes and helping through construction (Pawson, 1987; Thorns, 2000). From 1984, first with Labour and followed by National Governments, there has been a profound shift in position. The deregulation and restructuring of the economy has been transformed through a process of continued corporatisation. With this shift, government organisations such as housing, electricity, telecommunications, airways and forestry are now State-Owned Enterprises and managed for profit (Murphy & Kearns, 1994). In the early 1990s, the National Government reformed housing to put state housing on a more commercial basis effectively corporatising state rental housing (Thorns, 2000). Sponsorship for state housing has also declined, although the Housing Corporation of New Zealand (HCNZ) is still the country’s largest residential property owner.⁵⁷ The consequence from that time has been increased housing costs and reduced security of tenure. This was made worse following the earthquakes where the customary rental market competed with three key drivers of increased housing needs and costs (CDC, 2014⁵⁸). Rentals

⁵⁷ www.hnzc.co.nz/about-us/

⁵⁸ <http://www.cdc.org.nz/wp-content/uploads/2014/10/CDC-Report-Price-Patterns-in-Christchurch-June-2014.pdf>
sourced February 21 2017.

were withdrawn from the market and used for short term worker accommodation and insurance subsidised short term rentals for those undergoing home repairs. Temporary earthquake workers seeking accommodation left the usual tenancy arrangements less stable and more expensive. Rents in Christchurch increased by 47.1 percent for a family dwelling between 2006 and 2013 (StatsNZ, 2013).

It is this residential churn, as referenced by interviewees that helped to disrupt social ties within neighbourhoods. Those who had lived in their rental homes for years were observed to have similar local relationships to those who owned. Length of residency is more important than tenure status of ownership or renting. Like other studies length of residency has been linked to having a sense of place (Hay, 1998). Predictable encounters with others help people to feel at home (Kearns & Parkinson, 2001). Although there is mixed evidence on the relationship between tenure and social relations, some studies provide contradictory evidence on length of residency and sense of community stating that social outcomes are about the community that is found there (Carson et al., 2010). Other have found that renters are less likely to participate locally, which is important to social interaction and sense of community (Moudon et al., 2006; French et al., 2014).

Education

Within this current Government's continuing neoliberal agenda was the closure of schools within Christchurch. Local schools function to enhance local sociability, but hold little value to central government around this function, being so removed from local decision making. There is poor connection, alignment and understanding between decisions made by local government and central government and ultimately how this may affect communities. Education decisions made for Christchurch post-earthquake have been against what was best for local communities. The decisions may have held short term fiscal advantage for managing education, but the role of education within the local context was and still is missing. In addition, the administrative boundaries of suburbs and neighbourhoods, through census units and mesh blocks, are not designed to help understand the effects among those who live there. They are designed as a means of collecting individualised data. This is perhaps an issue with the Ministry of Education review of Christchurch schools where boundaries were arbitrarily made in the name of education. In September 2012, under the guise of a title called 'Shaping Education', school principals were called with little notice to a sports venue where they learnt whether their school was to remain, merge with another or close. This was said to be based on school rolls and not education needs. For many participants, being embedded within their neighbourhood was through having young

and school aged children, and has found by others (Witten et al., 2003). Sooze was clear on the role of schools to community.

Sooze (KI): *Because when your kids are five, you are a big part of this community and then they turn 13 and suddenly you are not and when you don't have kids like a friend of mine there is something in there about how schools operate within the community.*

The importance of a local primary school within a community context is missing from the Ministry of Education, who do not consider schools to be an integral part of community. Schools are tied to community through the close relationships among people within neighbourhoods including elderly people. Two elderly participants spoke of the sadness at losing the sound of children's laughter as they walked to school before nine and then after three. Hearing the children was a valued part of their daily routine. Closing a school can have a larger effect in areas where residents are more economically deprived such as Phillipstown, especially where the school is a focal point for social connectedness. This is less important in the more socially affluent areas because parents have a greater number of and more diverse social networks. This has been described elsewhere in New Zealand (Witten et al., 2007).

Business

Another issue has been the shift, a decline in local owned business to more corporate ownership. Quality shops that are within walking distance and contribute to local life are now less prominent, especially those rebuilt in the East. The butcher in Opawa explained how he could not compete with the rebuilt supermarket, less than a kilometre away, in St Martins. He closed his shop not long after the supermarket reopened in 2014. Commercial activity and shopping has been dominated by large corporate malls (Chang et al., 2014), most is contained in five large malls, which is not particularly conducive to social interaction. Banks are also moving away from smaller high street situations, focusing on these malls and online services. This reduces access for elderly people or less affluent groups, especially those without access to the internet or to personal transport. A good example in Christchurch is, within 2016, two banks and a medical service moved from the main street of Woolston to a newer car accessible shopping strip and closer to more affluent suburbs.⁵⁹

Small businesses are also important in helping to facilitate social connections. Chapter 6 highlights the value of fish and chip shops, the dairy or pub as important bumping and gathering

⁵⁹ <http://www.stuff.co.nz/the-press/news/90759832/hard-times-and-hope-in-woolston>

places. Small businesses such as cafés, restaurants or pubs are predominantly privately owned. Small business like these can be important for social interaction (Chamlee-Wright & Storr, 2014). The literature is growing on community relationships and the role commercial businesses have in fostering these connections (Storr, 2008). These places were important for participants and with disruption, were much missed. Little research focuses on commercial ties, the relationship a shop owner has with neighbours or local residents. There were many stories of shop owner handing out food and supplies to local resident's post-earthquake; the social networks within a business context need further investigation.

The economic mechanisms of private sector organisations mostly do not have an interest in local areas. In Hoon Hay, for example, the business area was zoned B4 under the district plan, which permits a supermarket. A key informant described how this is one of a few parts of the city with this zoning without a supermarket, the inference was because it was not an affluent area. Phillipstown also has little in the way of access to resources provided privately such as a medical practice or pharmacy, though access to a supermarket is relatively close in a mall in an adjoining suburb. Although, Pearce, Day & Witten (2008) found less affluent areas of New Zealand usually have access to a supermarket and convenience stores.

7.6 Bringing everything together to plan for resilient communities

Policy and planning decisions determine and enable the structure and configuration of the built environment. Most planning frameworks have a vision of sustainability, good health and wellbeing, economic development and prosperity; the list goes on. Resilience is now often added to that list. The literature recognises how the influence of social capital bolsters many of these visionary outcomes. As discussed previously what is absent is what builds the formation of this social capital. What is the role of planning in materialising these outcomes across multiple domains, including for resilience?

A key issue for urban planning and development in implementing a plan for resilience, is whether to put the focus on place, the built features of neighbourhoods, home and infrastructure, or on the psychosocial features that enhance community development for collective action. Macintyre et al., (2002) suggest focusing on one or the other is counterproductive as it is too difficult to disentangle the elements that create neighbourhood. The physical features and social infrastructure, provide for physical activity and also enable the meeting of others to build social connections and for helping to build a sense of place and attachment (Macintyre et al., 2002). Added to this the sociocultural features and reputation are the result of the collective social

functioning and social practices occurring there (Macintyre et al. 2002). This is about how people use and feel about their neighbourhood and whether they belong to community groups. Also, how they feel about their neighbours and their perceptions of connectedness. Even when collective practices that support community are founded outside of where people live: interest groups, the work place, religious affiliations and sports clubs, they are still often anchored through common meeting places (Giddens, 1984). All confirming the role of place, the contextual elements of the local, physical and social environment that help to influence and build behaviour towards a resilient community.

Resilience has been incorporated into hard infrastructure. Although not part of this study, it is important to recognise, the formal structures that develop such infrastructure, already adhere to resilience principles. For example, the Christchurch City water supply has always been highly redundant, using a network of wells and storage facilities that enable stable and consistent performance under stress. Water was returned to 90% of residents after four weeks following the February 2011 earthquake (Giovinazzi et al., 2011). The electrical network is similarly well distributed, with electricity returned to most residents within 10 days. The combination of assistance from infrastructure organisations outside of Christchurch (under pre-existing mutual arrangements), high insurance cover and a predominantly redundant network meant a more resilient system (Giovinazzi et al., 2011). The management of wastewater is the exception, being reliant on one connected and linear sewerage and treatment system, one that was described by key informants as close to collapse. A more distributed network would improve the resilience of the sewerage and treatment system (Gay Alanis, 2013).

Key informants described how this hard infrastructure is better connected and less centralised. City Council staff had for years before the earthquakes, been moving stormwater management to low impact design. Key informants noted it took time for low impact urban design to be adopted as is often perceived as expensive, having greater upfront costs. In addition, most cost benefit analyses do not consider or evaluate the multiple and long-term benefits that can be gained from such alternative approaches (MacMullan & Reich, 2007). A change in local government attitude is gradually shifting from the conventional model of hard infrastructure to a more robust and resilient model. A similar shift is required to how we build or modify the built environment for social and cultural outcomes. The economic and fiscal analyses of new residential developments post-earthquake have been very conventionally applied. The result is that most post-earthquake urban redevelopment has been to continue to expand on an undesirable trajectory of predominantly standalone, conventional and conservative suburban housing in new and some very dispersed

suburbs. This was noted by most key informants and many participants, including Graham and Chris.

Graham (Opawa): *We have massive development occurring out in sprawl.*

Chris (Merivale): *Especially after the earthquakes, where suburban sprawl is bigger than ever and it is not fair to build places like Wigram estates and it is one of the better ones. If someone said I had to live in a new place I would live in Wigram... But ooh Pegasus now that is a puzzle isn't it and if I had to live in Rolleston, or West Melton oh my how awful would that be.*

Recovery from the earthquakes has been driven by a top down, single central government agency management structure that has made community involvement difficult. The current National Government has been in power all through the recovery process overseeing the Christchurch Central Recovery Plan and the Land Use Recovery Plan (LURP) (see Chapter 3). Both have seen very top-down planning with little or poor community consultation and even less engagement. This is very different from what the community had voiced through the 'Share an Idea' engagement process carried out by the City Council in May 2011, to prepare their strategy for the rebuild of the central city. The Council's Central City Plan was supplanted by the Government's Christchurch Central Recovery Plan and Blueprint. At the same time the LURP replaced the direction set by the UDS.

Central government took a lead role in the recovery process for greater Christchurch for two reasons. The first was the result of limitations in civil defence (Kipp, 2016). The second noted by key informants was the troubled inability of the City Council executive to recognise the changed circumstances and to move out of a business as usual approach. In response, CERA was established. The earthquake brought a need for innovation, but CERA did not provide this. Kipp (2016) argues that the top down approach was the result of the political ideology of the National Government. Government assumed it would be more stable to manage this way by working through their relationships with several large land owners and developers, and large business. The National Government's management of the Christchurch rebuild has been described by economist Eric Crampton⁶⁰ as a sin of commission. He made the comparison to their management of the Auckland housing market, which he described as a sin of omission.

⁶⁰ Eric Crampton economist interview for The Press – Saturday January 14th, 2017.
<http://www.stuff.co.nz/national/politics/88226400/National-portrait-Eric-Crampton-economist-and-original-thinker>.

The LURP needed to find an additional 8000 plus new homes to replace homes in the residential red zone. Through the LURP, the rebuild of greater Christchurch housing has largely focused on low density development, with few or more distant local centres. Social infrastructure has also not kept pace with this residential development. A significant proportion occurs on the urban fringe or semi-rural areas of Selwyn and Waimakariri Districts. This has been politically advantageous to Waimakariri, but particularly to Selwyn, taking in greater numbers of residents. The result is more dispersed almost the ‘business as usual’ model as outlined in 2006. The planned greenfield over 35 years occurred within five. The trajectory is the very model UDS partners were trying to avoid (UDS, 2007).

Expansion into the rural fringe of Christchurch has risen from several forces. CERA having the lead worked with staff from the local authorities many of whom had not been party to the strategic understanding or the direction of the UDS. The opportunity was given to develop land, much of which had been purchased through speculation and land banked years earlier. Another issue relates to the structure of local government. Selwyn District, and to some extent Waimakariri District, compete with Christchurch for rate payers. Prior to 2010, residents of Rolleston and Lincoln townships, for example, used the social infrastructure built and paid for by Christchurch residents (UDS, 2006). One advantage of the increase in these districts populations has seen settlements like Rolleston and Lincoln grow to a size that has delivered local social infrastructure. Rolleston now has the population to warrant a local high school which opened in February 2017 with 225 first year students.⁶¹ Other new subdivisions further into the hinterland of semi-rural settlements in both districts, however, are heavily car dependent with poor access to social infrastructure and employment.

7.6.1 Policy and planning for resilience

The connection between planning urban environments and what has been learnt about building sustainable and resilient communities is lacking. A significant issue for New Zealand is this divergent view of political ideology between the major parties on the role of local government and community wellbeing. In 2013, the Government made amendments to the Local Government Act 2002 (LGA) that essentially removed local government responsibility for social, economic, cultural and environmental wellbeing. Under the 2013 amendments, local government is responsible for administering central government policy at the local level and to only provide services that are unable to be met by the private sector. This is a significant shift in ideology from

⁶¹ <http://rollestonsec.school.nz/frequently-asked-questions/>

when the LGA was drafted by the Labour Government in 2002. The National Government's view is that local government's role is to provide infrastructure in the most efficient means as possible. A return to a time when the axiom was that local government was responsible for 'roads, rates and rubbish'.

Local government is mandated through multiple pieces of legislation. The RMA directs resource management including land use planning, while the LGA and Land Transport Management Act 2003 (LTMA) serve to manage the location, nature and timing of infrastructure. The combination of decisions under these Acts, affect land use development patterns. In 2002, a review by Local Government New Zealand⁶² (LGNZ, 2002) found a commonality of purpose across the three Acts. The National Government has directed the erosion of alignment, with the recent changes focusing on efficiency and cost effectiveness as the primary drivers. The result has been an emphasis on economic efficiency over the quality of other outcomes for long term benefit. Consultative processes also have been reduced through the earthquake recovery period. Oddly though, the CDEM Act (2002) still holds local government responsible for these same four community well-being principles; social, cultural, environmental and economic wellbeing. These differing and changing legislative directions make it difficult to strategically plan, under the current legal framework, for more sustainable and resilient communities. Agreement over the longer term is required.

Recovery should not focus only on the hard elements of the built environment, but should include outcomes with community at the centre. A review in 1991 (NZLC R22, 1991) recommended the adoption of an all hazards approach with an emphasis on pre-event planning. This review recommended there be greater compatibility with the LGA 1974 and plans made under the RMA to strengthen linkages between hazard and land use planning (Saunders et al., 2007). Also, research through the Natural Hazards Research Platform indicated that an all hazards comprehensive and integrated system based on risk was needed (Britton & Clark, 2000). The result is an improved understanding and stronger emphasis of hazard management into planning processes. 'Build back better' is generally accepted across nations as an appropriate response for disaster recovery. From the Christchurch perspective, the repair of physical infrastructure especially horizontal infrastructure of roads and pipes has been and continues to be a gargantuan task. But rebuilding should also include the social foundation of community especially the spatial dimension of neighbourhood. Local government needs to take a lead role but supported by central

⁶² Represents the national interests of local government in New Zealand providing advocacy, policy services and training to local councils.

government given their responsibilities for social conditions, housing, health and education. The necessary thinking about the social and structural elements of building social capital to enhance collective action and self-help is not integrated into planning across government. The element of the role of the built environment and placement of social infrastructure in self-help readiness is still not well developed.

7.6.2 Role of Planning

There is also a common failure to translate the vision as outlined within the planning framework of sustainability, health and wellbeing, and resilience. Strategic policy is difficult to implement, as it relies on changes to the underlying technical policy and planning documentation, followed by implementation on the ground. What is needed is the removal of procedural practice and in its place, processes that favour a way of understanding and assessing multiple futures. This includes better processes for envisioning planning outcomes and the economic evaluation for public benefit.

Across nations, planning policy is often led by technical experts who set the rules against which developments are evaluated (Brody, Godschalk & Burby, 2003). These same technical experts can also drive the process and then lead planning decisions. Although there may be opportunities for public input this is often limited and after fundamental decisions have been made. This shift toward a mediator expert process with expert rational planning continues to fail to deliver what communities continually say they desire and need (Carson, 2011; Reddel & Woolcock, 2004). The same unresolved structural issues continue with the way planning is practised in New Zealand. A foundational premise is that planning is based on clear processes of analysis and evaluation, all within a frame of reference of being values neutral. What is needed is better clarity of the social and cultural values that underpin the assumptions of decisions made, the social outcomes planning is striving for. Here also the expert-led approach continues to dominate. The same consultants are used to assess developments also often give directions affirming preconceived ideas or biases. The result is predetermined outcomes (Salmon, 2015). Key informants described how planners may also sit uncomfortably between residents and governance, many of whom hold strong neoliberal views. These structural planning problems have influenced the poor and non-sustainable development occurring in greater Christchurch today. In Christchurch, land developers had the influence to realise their investment potential. Because the government in power had a focus of economic outcomes the economic elites had too much influence and this was further exacerbated by the structural arrangements that advantaged business as usual.

The existing pattern of land ownership has become embedded as the norm. It is what some residents aspire to and therefore has status and desirability. Because so much is invested by individuals in this model, combined with the added capital investment gains by developers and real estate, it is going to take a monumental shift to achieve change. Central government has a lead role to play to bring greater flexibility to planning, especially to identify future needs. Christchurch, for example, has an ageing population many of whom wish to ‘age in place’ and this has individual and public benefit. Traditional suburbs within or near centres and with access to natural or green spaces, need to intensify and provide for a range of different styles of housing for all age groups and provide the social infrastructure that encourages social interaction.

The National Government has a strong view on who is responsible for community wellbeing. They have little respect or understanding of the role and functioning of local government. In turn, local government does not have the structures or expertise at the broader strategic policy level to directly engage with central government. The current neoliberal ideology places people as self-contained, as a consumer and disconnected. Bowyer and Gillett (2015) discuss the erosion of community as ‘places to be’ in relation to increasing suicide. In a paper that seeks to separate the notion of suicide as an individual medical issue, the authors emphasise the importance of the socio-political structures of someone’s life. I would argue that for many local is important as employment may not provide everyone with supportive social engagement to carry out social practice. It is the place where people live that provide the sustenance for their everyday lives. The mapping results of my interviews showed the importance of local to those who tend to not have economic or political power. Individually employed, women with young children, elderly people and those not in fulltime employment were more active and intimate with their neighbourhoods. This is described and observed by others (Ivory et al., 2015), especially where low incomes and lack of a car restrict where residents can go outside of their neighbourhood (Diez Roux, 2003; Perchoux et al., 2014). The more professional and the decision makers used all the city well, their greater mobility and income gives opportunity to select and engage in activities across much of the city. Professionals and decision makers may not see the significance of the local bumping and gathering of people at the school gate, the local park or community house.

7.6.3 CDEM and the planning framework for resilient communities

Kipp scrutinised why special legislation was required for Christchurch in his review of the emergency powers and civil defence (Kipp, 2016). The first Civil Defence Act 1983 was described as necessary to aid communities suddenly struck by disaster and that civil defence was every one’s responsibility (Kipp, 2016). This concept of self-help continued through the

development of the CDEM Act 2002. No explanation is provided as to what this means, although the intention was stated to relieve the burden on local government. Kipp (2016) outlined that although the Act did raise the authority of civil defence, the Act did not direct, support or instruct local government as to how to do this. Local government is, however, obligated by law to continue this self-help policy. The result has been that civil defence action for local communities is directed through a separate paradigm. Kipp (2016) noted the irony of a top down structure where responsibility still sits locally. The link between what drives local self-help and collective action is not part of strategic policy and planning. Local self-help and collective action is not referenced within the planning framework. And civil defence has not been part of the discussion on the broader planning for the built environment or how to build resilient communities.

The National Civil Defence Emergency Management Strategy (2007) states clearly, a vision to build a resilient and safer New Zealand. Among its stated purposes are to improve and promote the sustainable management of hazards in a way that contributes to social, economic, cultural and environmental wellbeing. The Guide to the National Civil Defence Emergency Management Plan defines the four R's as:

Reduction: identifying and analysing the long-term risks to life from natural and non-natural hazards, taking steps to eliminate these risks and reducing the likelihood of their occurring.

Readiness: developing operational systems and capabilities before an emergency occurs, including self-help and response programmes for the public and programmes for lifelines and agencies etc.

Response: actions taken immediately before during or after an emergency to save lives and property and to help communities recover.

Recovery: the coordinated effort and processes used to bring about the immediate medium term and long term holistic regeneration of a community after an emergency.

Burby et al., (2000) argue that mitigation strategies (i.e. reduction), should be an intrinsic part of land use planning along with community involvement, zoning and rules. This is so communities are more resilient to natural disasters and can recover more quickly. This last sentence is applied flippantly across much of the literature as though response and recovery occurs through this hazard reduction planning. Many argue that the recovery phase is described as the least investigated (Berke et al., 1993; MCDEM CDEM Part 2, 2012; Kipp, 2016).

I would argue that the readiness component is also substantially underdone. Greater emphasis on enhancing social connectedness through land use planning and urban design will contribute to building community capacity to be used when needed. The land use component connects the link between readiness and recovery. There will be other earthquakes and other disasters. What has been learnt in Christchurch to change or enhance the ability to respond and recover from another large earthquake? In a land use planning and policy context, apart from strengthening buildings and essential life line infrastructure very little has been done to enhance community adaptive capacity and competence within neighbourhood. The Resilient Greater Christchurch Plan (CCC, 2016) does provide a strategic view but planning has not changed. There is continuing poor alignment of institutional decision making to support community resilience. For many access and proximity to social infrastructure and amenity provided by both central and local government has reduced or yet to be placed in new developments. The philosophy on which civil defence is built, that of local responsibility and the principles of self-help and mutual support within community guidance will not have had time to develop. As found here longevity of residence can help to mitigate the lack of social infrastructure. This is still not part of the planning framework for hazard preparedness and response (Kipp, 2016). The translation of how to plan and build living environments that form and strengthen community competence is still missing. Also the governance model of response and recovery does not sufficiently include community participation.

7.7 Chapter Summary

This chapter attempted to bring together the findings from Chapters 5 and 6 into the context of a resilience framework. Community resilience is a consequence multiple factors; of place, especially neighbourhood, in part the geographic clustering of able individuals and of the socio-economic and institutional arrangements of government. The placement of social infrastructure, employment and housing, for example, are all based on decisions made by two tiers of government and the private sector. These three elements are all connected (see Figure 7.2). Resilience is shown in this research, like Norris et al., (2008), as tied to a broad network. All contribute in some way as socially determined features that influence health and wellbeing. Resilience is a product of everyday life. From as far back as 1960s, Lee (1968) points to the conclusion that a mixed physical and social layout that deliberately provides for local satisfies multiple needs – health and wellbeing and as seen in this research, resilience.

What makes this research different is that the observed resilience is more than simply describing community strengths or attributes through social capital (Pfefferbaum et al., 2007; Aldrich, 2010; 2012) or community competence from the public health literature that also focuses on social capital (Goodman et al., 1998). The shift is that social capital and community competence contribute with other resource elements, which together, contribute to resilient communities. These two resource contributions are influenced by the compositional and contextual features of neighbourhoods.

Together these contribute to how resourceful community can be following a disaster. Resourcefulness relies on being able to identify and utilise resources whether these are social connections and networks especially using bridging and linking capital. Norris et al., (2008) includes a time frame for these resources, as they need to be able to mobilise quickly and efficiently and when needed. Marae were exemplars, Rehua Marae having been structurally made sound after the September 2010 earthquake, was mobilised and ready to be used as a welfare centre within 24 hours of the February earthquake. ACTIS and Project Lyttelton were also noted for their immediate response in areas that experienced significant damage. All were in place and could adapt to changed circumstances. Adaptability was observed by key informants and described by participants across suburbs after the Canterbury earthquake sequences. This research outlines a strong potential mechanism for this observed adaptation and capability was the role of key physical features and social infrastructure in supporting social connections and networks. It also demonstrates that it is possible to plan for and work toward more resilient communities.

Sense of place and belonging were strong themes throughout this research. As described by Chamlee-Wright and Storr (2009) and Smith and Cartlidge (2011) sense of place acts as an anchor to strengthen the feelings of belonging that are reinforced through the mutually shared hardship associated with recovery after a disaster. The results showed that attachment to place and a sense of community were both significant contributors to resilience and are strengthened through length of residency. The longer participants had lived in their neighbourhoods, the more attached they were and the greater their sense of belonging. Tenure was meaningful in that young renters did not feel as attached as long-term renters who were older. Long term renters described their neighbourhood attachment in the same terms as home owners. The institutional legislative and policy contribution on the drivers of longevity of tenure is an additional dimension to be added to long term interventions for advancing social outcomes. To support attachment and belonging, residents need to know the boundaries of neighbourhood to help understand where they belong. Having recognisable features whether physical such as a natural feature of a river or waterbody,

large park with large trees all help residents to bond their neighbourhood. A geographic understanding of their home surrounding helped to develop a sense of place. The affective attachment to place and having a sense of belonging was strengthened by walkability and having local access to social infrastructure all help create the interaction, the memories and experience of place.

Previous disaster research describes how people of lower socio-economic status often experience greater psychological issues than residents of higher income areas (Norris et al., 2002). But as discussed in Chapter 5, at an individual level, some of the most resourceful interviewed were the least affluent. This aligns with Fergusson et al., (2014) who found local support provided access to resources and was a protective factor for individual and community resilience. Fergusson et al., (2014) and this research found many who would be considered vulnerable were not because of local support. Phillipstown and Rowley (part of Hoon Hay) both had significant community development programmes that could help offset potential vulnerability.

Suburbs identified as lacking resiliency went unnoticed by formal structures. These suburbs don't have centres and or gathering places, therefore, make it harder to navigate how to provide support. In addition, these suburbs may lack political connection, the connection with Marae, or community development programmes having no places to perform formal duties. The low-to mid-income suburbs built from the 1950s did not manage well, and it did matter. Norris et al., (2008) equates this with lack of political connection and class. Suburbs like Heathcote Valley, at the epicentre of the February earthquake, was extremely damaged went unnoticed by civil defence. But this suburb exhibited strong community action, adaptation and support. The result of the composition of people living there combined with key features and social infrastructure, Heathcote Valley was described by key informant Sooze as having the fundamental components.

Sooze (KI): *Living in a village is one of the values we have, that is why we intentionally called ourselves the village project. And it centres on a pub, and the village denotes some old-fashioned values, but they are wonderful, a church and a pub and a school.*

Under the LURP, greater Christchurch has undergone peripheral greenfield development at an accelerated rate. This study's focus was not on the external social, environmental, fiscal or broader economic costs of sprawl. Rather the focus was on what urban features need to be in place to develop social interaction, all part of building of healthy and resilient communities. New subdivisions often lack the opportunity to develop or carry out social interaction. And for the

featureless suburbs that lack a centre or gathering there is a need for community development programmes.

Essentially, the current paradigm expects residents to rise to the occasion when needed, but the current planning framework does this without understanding the importance of the social development that underpins this behaviour. The endogenous capacity of a community can be developed and the elements that help to develop that with that comes multiple benefits, of socially sustainable communities and improved health and wellbeing for every other day. This requires institutional acknowledgement of a clear vision of what we are developing our urban areas for new and warm homes but also the infrastructure and neighbourhood layout that help to develop socially well-connected neighbourhoods. The main message from this thesis is that is possible to develop our urban environment in a way that provides multiple benefits, one of which is to build more resilient communities. Essential is good urban design with welcoming streets to increase conviviality and with enabling social infrastructure, the third place; a school gate, a local shop, café or pub.

Chapter 8: Conclusion - resilience and every other day

Researchers across multiple disciplines have contributed to the understanding of the significance of social capital in community resilience (Ferguson et al., 2014, 2015; Aldrich & Kyoto, 2017). A more integrated enquiry is developing across these disciplines to explain the adaptive capacity and function that enables local communities to manage and cope following a disaster. While, the importance of social capital cannot be over stated, the current understanding of place does not sufficiently consider the fundamental connections between social capital and place, the neighbourhood, or the institutional drivers.

What has been found in this research could be construed as familiar. The features that provide for a more resilient community are the very same well understood features of place that influence health and well-being. The findings from this qualitative research indicate that social capital and community competence are significant resources to be called upon after a disaster. The contextual elements of place are important to the formation of social connections and networks. However, it may not be possible to purposefully build strong resilient communities through the contextual features alone. Communities are also the outcome of who lives there. Similar people congregate within a geographical context. Some places draw individuals that are more enabling and resourceful, or are more socially orientated.

Resilient suburbs exhibited community led adaptive capacity and mutual support, functioning positively through the devastation brought about by the earthquakes. These same suburbs often showed proactive functioning through the recovery period with new or enhanced community participation projects to bring their communities together with the aim to be better prepared for future events. Relational place based structures, the Marae and the faith based organisations like the South West Baptist Church in Hoon Hay were very cognisant of their role in enhancing functional adaptation and community capacity building.

This final chapter revisits the objectives of this thesis and what was found. It then highlights the implications and the limitations from the research. This is followed by a section on recommendations for further research in the context of resilience and ends with a concluding section tying together the findings.

8.1 Research aims revisited

The aim of this research was to meet the overarching question (see Chapter 1) with three aims under this. What is it about features of neighbourhood that helps to develop a sense of place that

can contribute to our understanding of community resilience? The first was to describe the community response of suburbs in Christchurch following the Canterbury 2010-2012 earthquake sequence. The findings of Chapter 5 reflect what others found researching the Canterbury 2010 – 2012 earthquakes. The case study suburbs that exhibited strong collective action, self-help to adapt, and local and emergent leadership had well-established social connectedness prior to the earthquakes. Participants well embedded into their community could support those who were less able to manage and had fewer local connections. These suburbs all have features in common: well defined geography or boundaries, access to quality natural places, a community hub or centre and quality local social infrastructure.

The second aim was addressed in Chapter 6: Results – Local environments and social connectedness. The aim was to explore the key features of the urban environment, the built form and social infrastructure that was important to helping to develop a sense of place and emergent local leadership. Again attention was drawn to well-defined geography, quality natural places, a primary school and places for people to meet or bump into and gather with others. All these contribute to social attachment helping to create stronger affiliation among residents. What was happening in residents' everyday lives prior to 22 February 2011 was the foundation for the response after the disaster. Access to local resources of specific skills, food, tools and knowhow, and information through capable and well-connected residents facilitated the ability to adapt to their situation and to help others in their communities. The social connections and networks fulfilled another purpose, being with others helped to create meaning of having some control through the collective action. Sharing narratives was part of the healing process and helped to normalise participant's experiences throughout the disruption. Participation and helping in the community brought people a sense of control. Sharing information also helped with individual and group recovery processes.

Chapter 6 also conveyed the importance of specific elements of home and their neighbourhood by pinpointing the features of the built environment that strengthened the observed social capital and social cohesion. People were well embedded through having young and school aged children, through church or other relational communities or just having lived in their suburb for a long time. Geographical features are also relevant, definition with a centre and proximity to a school, and bumping and gathering places. There was deep connection to natural places. All contribute to attachment to place and a sense of community. These developed through the spatial configuration of home and neighbourhood.

The compositional characteristics of individuals such as personal values and lifestyle helped to advance responses across neighbourhoods. Their personal values of needing to be near natural features: the hills, coast or large parks where they can be physically active, take time out with others or be alone. Many were very able, had skills and experience of being out of the urban environment camping and tramping, these skills were invaluable.

Although the focus of this research was on specific features of neighbourhood, additional domains of society influence neighbourhood. This shows the complexity of determining the drivers for more socially connected neighbourhoods. Institutional arrangements at all levels of government contribute to determine whether neighbourhoods can be socially well connected or not. Local government is responsible for local land use planning; however, central government legislation and policy oversees social housing, rental laws, roading infrastructure, health spending and where schools are positioned, and all play a part.

New Zealand will continue to have earthquakes. As I write this in November 2016, a 7.8Mw earthquake hit Kaikōura about 190 kilometres north of Christchurch,⁶³ two people died and many others were injured. The shock waves directed north has disabled buildings and infrastructure and damaged building in the capital, Wellington. More recently on March 2017,⁶⁴ a disaster scenario described in the local Christchurch newspaper outlines an anticipated 8.2M^w earthquake along the Alpine Fault of the South Island. This earthquake is expected to be extensively destructive, cutting off communities across large parts of the island for a significant period. It is a reminder as to why New Zealand is called the shaky isles. There is a compelling need to be prepared for further seismic activity, as well as increased weather disruptions associated with the changing climate.

The third aim was to explain how what was found in Chapters 5 and 6 could influence future planning for more resilient communities. The intention of this thesis was to contribute to a more compound understanding of community resilience. The findings were intended to have both an academic and an urban policy application. The importance of the social context is often expressed within the strategic direction or vision of planning documents. The issue is that this intention does not get translated into the implementation of plans for the built environment. There will always be neighbourhoods and communities that are more resilient. But by ensuring the main ingredients of what helps to form well connected community are actively in place will help. Policy and

⁶³ <http://www.stuff.co.nz/national/90444877/kaikoura-earthquake-ruptured-21-faults--possibly-a-world-record>

⁶⁴ <http://www.stuff.co.nz/the-press/news/90364889/magnitude8.2-the-disaster-scenario-on-new-zealands-most-dangerous-fault>

planning need to ensure the contextual component is in place, which may also draw the compositional component. These are:

- Development and street patterns that enable walkability within and between neighbourhoods to promote connectivity and conviviality
- A central hub or centre
- A local primary school
- Proximity to places that enable propinquity, parks and local small shops
- Proximity to places for gathering such as a local pub, café or a community house
- Easy access to quality well established natural environments
- Social infrastructure that serves local purposes, such as a library, pool or community house
- Suburb boundaries that provide geographic definition with consistent naming
- Public participation via community development programmes or community projects

8.2 Implications

This research offers an exploratory understanding of resilience through observation. A critical realist approach allowed the research to evolve as data was collected. The value of this greater flexibility enabled deeper insights to be drawn from the participant interviews. Using qualitative methods allowed for more a subtle exploration of differences within and among neighbourhoods and suburbs. Norris et al., (2008) discusses the utility of using qualitative case studies of a specific community in relation to a specific response. This research outlines the value of in depth qualitative study for a more nuanced understanding of the role of neighbourhood in community resilience.

Qualitative methods offered insight into what facilitated the collective action, which may not have been revealed through fixed quantitative processes. Continual reflection of the aims of the research saw a transition from a perspective focused on the earthquake response toward a stronger emphasis on the everyday lives of people within their neighbourhoods. The preconditions of neighbourhood were central to what happened after the earthquake struck. The interviews revealed richer data on how participants use their neighbourhoods, their sense of belonging and sense of community. They could tell their stories of their lived experiences through the earthquakes and their everyday lives.

The strength of this research is the exploration of resilience from home and neighbourhood. Key informants delivered a wide range of perspectives across multiple variables, as a resident directly affected by the earthquakes or a community organiser, leader or decision maker. Their views were aligned and consistent over the role of place as a driver of resilience. Participant interviews confirmed that their social connections were largely the result of the common characteristics of place. From a resilience perspective, the conceptual framework of neighbourhood accounts for some differences observed across suburbs.

Evidence is growing of the need for design promoting health, and wellbeing (Diez Roux & Mair 2010; Braveman et al., 2011). Here, the focus is on the broader aspects of where people live to help determine choices and behaviour for health. This research contributes to recognising how this also applies to community resilience. Significant funding is provided under the National Hazards Research Platform, the Programme and Resilience to Natures Challenges. Most is still directed toward disaster management through land use planning and household preparedness. Less directed toward understanding the social elements of community resilience. Social behaviours such as being involved in local neighbourhood and knowing others locally are invaluable in this context. Alshulter et al., (2004) states a deeper understanding of the settings of life are needed to understand resilience. This research confirms the value of ties through everyday practise contributes to the collective action to be utilised when needed.

Central government expressly the current National Government deals with community through its relationships with big organisations, companies and developers. Their focus is on the broader economy and is not directed to local outcomes. Greater collaboration among central, regional and local government is required on cultivating liveable placed based communities to strengthen resilience. The shifting political ideology and changing legislative directions make it difficult to strategically plan for the longer term. Commonality of purpose is needed across the three major Acts supporting local government: the RMA, LGA, and LTMA. Amendments to the LGA (2013) do not support the Civil Defence Act (2002) that is still rooted within the framework established under the founding LGA (2002). A legislative gap as well as a philosophical gap now exist. The current focus is on economic efficiency over quality of outcomes for long term multiple benefits. Agreement on a legislative and policy framework across political parties and through the tiers of government is needed to develop more sustainable and resilient communities.

Translating research knowledge into action can be difficult to achieve and requires political will. One matter concerning socially derived outcomes relates to what are called wicked problems.

Blackman et al. (2006) describes this complexity, where there is no definite formulation to provide answers. The issues continually evolve and so require constant assessment, there is often more than one solution and no principle solution fits all members of society. In addition, some causal relationships identified as a problem or solution can be symptoms of another issue. To emphasise this, what was explored here does not neatly fit into the Reduction, Readiness, Response or Recovery as outlined within the National Civil Defence Emergency Management Strategy (2007). The relationship among these four factors is not well described, understood or managed in practice. In fact, it draws well on the parallel of how society is managed through silos. Emergency management is administered on a day to day basis at the local level, but not well integrated into the planning framework. Hazard management is well integrated in the planning framework, but not how we build our neighbourhoods or suburbs for social resilience.

The formal response to an event like the 22 February 2011 earthquakes should occur at local government level, where the city is apportioned into management areas. An opportunity to respond through local government was missed in Christchurch but taken up by Waimakariri District Council, although this was most likely the result of a function of population and the areal scale of the disaster to be managed. In Waimakariri, recovery suburban hubs of about 1000 to 1500 households were created to carry out recovery activities. See Vallance (2015) for more discussion on the Waimakariri response. This permitted sufficient closeness to the community while also allowing management at the broader scale. The well-defined Christchurch suburbs that exhibited strong well integrated collective action are of a similar population size.

Civil defence did not utilise or understand how to integrate local civil defence, local knowledge and local knowhow into the emergency management structure. As observed here, an important constituent of resilience was participating in the aftermath. Emergent collective action was coordinated by individuals and community groups, not by formal emergency management. The endogenous capacity of local community provides multiple advantages. First to provide local collective action to benefit those in local neighbourhoods who needed support. And second, opportunities to help provides concomitant positive individual outcomes reducing stress while also providing aid to individuals to regain and maintain a sense of control. Participation also aids communication and information sharing, a fundamental resource to be used and managed for broader psychosocial recovery. When there is national scale disaster, national structures should not override the local context. This is exactly the time in which local knowledge and local support is required. Post disaster recovery processes require new thinking, especially the transition period from response to recovery.

8.3 Limitations

In researching community behaviour there are always methodological limitations. The interpretation of how people feel about their neighbourhood, what is important to them and how they interact is usually reported by the sampled population. People who allow to be interviewed and even those who remain in certain neighbourhoods are indicating their preference for that place by continuing to live there. Many interviewed were home owners or long-term renters; I had difficulty finding young or short-term renters to participate. What is reported here, therefore, may be moderated by the positive outlook of those who have chosen to remain and are more embedded within their neighbourhood. They may be more likely to adapt because of their contacts and access to resources. Many participants interviewed understood and acknowledged this advantage.

Another limitation was the choice of the suburbs studied, located in the south or central area of the city. Suburb selection was a difficult part of the development of this research. Case study suburbs did meet a large part of the diversity of characteristics found in Christchurch suburbs. The missing element was a new subdivision. The research was by design exploratory and intended to ascertain the features of built environment influenced social connectedness. Due to the commentary and comparisons made by participants about new subdivisions, it would have been useful to include one as a case study suburb. Particularly as a comparison to Hoon Hay, a typical 1960s subdivision that lacks much of the amenity like new subdivisions, but because many residents have lived there over decades they were well embedded in the local community. Time appears to have an ameliorating effect. The lack of social infrastructure and uniformity of neighbourhood layout would have made a relevant comparison, especially in relation to the compositional features of residents.

Within this study there was also potential for sampling bias. My own personal bias may have affected the results. An underlying personal purpose may have been to confirm the importance of the social context of neighbourhood. My life experience has afforded me the privilege of living in a variety of housing types in different parts of the world. I prefer walkable neighbourhoods that enable social interaction. My selection of key informants and participants may also contain bias thereby affecting the results. Most key informants were selected because of their employment or involvement with community. Participants also focussed strongly on community, even Merivale and Opawa participants still valued their ability to interact socially with neighbours even though they used most of the city for their activity space. As noted in this thesis participants had strong views about new subdivisions. Heins (2015) found participants with low affinity to the central city or local neighbourhood favoured social interaction with friends and family who are likely to

share similar values and aspirations. Very little exists in the literature reviewed on this, and quantitative analyses specifically would not pick up subtle and specific differences in values among households. Heins (2015) participants also liked to drive, valuing the time alone. Many in this study did not. Participants of this study valued their time alone and being close to features of the natural and to local social environments. The relationship between personality and residential location /housing choice would warrant further analysis.

8.4 Recommendations for future research

Further exploration is needed to understand the complexities of where vulnerabilities lie. In this study vulnerability was not so obvious. Phillipstown and Rowley, for example, would be considered socially vulnerable compared to more affluent suburbs. For Phillipstown, the pre-existing community development processes in place prior to the earthquake helped to negate or reduce potential vulnerability. These community organisations effectively addressed what Bolin and Stanford (1998b) describe as *unmet needs*. Suburbs without these and without social infrastructure or a place to meet were observed to manage the least well. Social vulnerability was described as having a lack of access to resources and where residents left the city or waited for the official organisational support. These suburbs are hidden from view in form and function. Nearly all research in Christchurch has been carried out in distinct areas such as well-defined suburbs by geography or deprivation, where there was strong action or community development support. Greater emphasis for research needs to be placed on the places where most people live.

This research was carried out four to five years after the Canterbury earthquake sequence. Longitudinal studies are few and limited in scope especially the long-term impact of earthquakes. An important subject is the impact of residential mobility. Many residents have moved homes multiple times across Christchurch due to the damage and demolition of homes and the transient or poor rental situation. Ten interviewed who were out of their homes for extended time noticed the effect on their children and local friendships. Parents had difficulty maintaining their usual patterns of life when they were removed from their local area. The effect on children was not part of this study, but is warranted from many directions; the effects of leaving home, the home territory and local social connections.

An underexplored area of research is the relationship between local business owners and the communities they service. Participants told of how after the February earthquake, local shop owners gave away food and supplies to local residents. For the damaged high deprivation areas parts of the city have lost local supporting business, to be replaced with global corporate chains.

The social networks within a resident and business context needs further investigation. Place based communities interact with local business organisations, however, the value as part of a resilience framework for community is not yet well established.

Having a local neighbourhood may be important for some of the population, especially for the independent worker, the homebased or the less privileged or who have less earning potential. A deeper understanding of who planning is directed toward needs to be built into decisions on urban and community development. Highly privileged and professional classes are the decision makers and perhaps cannot see the world outside of their own experiences. For these people with relational connections across the urban area may not see the importance of local. More analysis around the different needs of city residents would be beneficial.

Natural spaces have been found to be crucial to the geography of place conferring multiple benefits. Few studies directly examine the relationship between greenspace and social contact (Każmierczak, 2013). Access to natural places appears to contribute to the composition of residents in neighbourhoods. There is evidence that people may prefer to live in neighbourhoods that comprise others like themselves in terms of ethnicity and social position (van Ham & Feijten, 2007). This may also be the case for access to attributes such as nearness to natural places or desire for social opportunities. This would merit further exploration. Why are some individuals drawn to and/or select to live near natural places especially for physical activity?

The northern and western parts of the city physically experienced the earthquakes like the rest of the city, but the recovery trajectory was different. Access to local business and social infrastructure remained and significant employment moved there. They did, however, lose the central city. Little has been studied on how it feels to be a bystander in a city where many struggled. Following a disaster those who are in proximity to damaged parts of a city but not directly affected have been observed to experience a negative psychological impact (Albrecht, 2006; Tapsell & Tunstall, 2008). Future research could valuably explore the differences among those who experienced the disaster but were not badly affected.

8.5 The last word

Lucy (KI): *There is so much to learn from this.*

Hokia ngā whakaaro ki onamata, hei whakaū onāianeī kia anamata

Look to the past, so we can understand the present and plan for the future.

This research underscores the need for a more nuanced exploration of disaster response and recovery processes. Implicit in this is the role of neighbourhood in forming and providing for essential resources. Adaptive planning is about making decisions with imperfect information and using disturbances such as these Canterbury earthquakes is an opportunity to learn (Holling, 1978). Using an adaptive model of urban development may have resulted in a different form for the newly developed parts of greater Christchurch. The rebuild has continued around a car based model of sprawl because of unshifting political drivers. Resilience is complex and multi-dimensional and the challenge is how to incorporate it with health and well-being, and sustainability paradigms holistically into planning. A problem is initiatives described as interdisciplinary are often a reconfiguration of research and continue to lack the integration across disciplines (Davidson, 2014). A higher level of interdisciplinary and integrative collaboration that focuses at multiple scales on outcomes is required. A gap still exists on how to build adaptive design with community participation, focusing on social outcomes (Pickett et al., 2004). More intentional community engagement and dialogue with communities through recovery is needed. Farrell (2015) describes the quiet stories told by Christchurch people as neighbours and strangers helped each other. These stories were not told to impress but to share as part of seeking out information and to comprehend what happened. People need to be with others and this could only happen if they know those around them and where people have places to meet.

Much of the thinking on resilience still sits in the engineering resilience setting. This relates to understanding the adaptation principle as having an endpoint (Fünfgeld & McEvoy, 2012; O'Brien et al., 2007). Here, more effort is given to adaptive methods that ensure physical infrastructure is better able to cope with change and large-scale events. The focus is still on risk management and risk based approaches. I agree with Fünfgeld and McEvoy (2012) who state that political decision makers would consider large scale transformation in planning as a failure of the current paradigm. Risk management usually does not take on an evolutionary learning resilience interpretation (Fünfgeld & McEvoy, 2012) even in the context of a socioecological systems approach. This does not allow for the constant changing nature of the world where systems are continually in flux (Davoudi, 2012).

The prospect for Christchurch to transition to a more modern resilient, healthy and sustainable development pattern has now been delayed by decades. Ironically, the most damaged areas in the east of the city now offer the most opportunity for greater adaptation. Potential areas include the

East Frame,⁶⁵ the Ōtākaro/Avon River Corridor and central and eastern city rejuvenation programmes.⁶⁶

When Christchurch residents were asked to share their ideas in 2011, following the devastation of the Canterbury earthquakes, the overwhelming desire was for something different. Six years earlier the greater Christchurch community had been asked through the UDS how they would like their city to grow. Through both processes the community desired similar same outcomes. Residents described desiring managed and quality higher density, an emphasis on sustainability, alternative transport options, green space, local centres and greater delineation between urban and rural. What has been rebuilt is the business as usual 20th century development dominated by urban sprawl with little local social infrastructure and homes that focus on the private space. Until more robust planning considers the full economic, social and environmental costs of this type of development it will continue as the preference for developers. The profiteering and exploitation of further business as usual has been seen following other disasters (Klein, 2007; Cox & Perry, 2011). Sadly this is the outcome of the LURP that superseded the UDS as described in Chapter 3.

New community amenities have been put in place or planned but these are often at the centre of a much larger number of households. There are less of the smaller facilities as found in the older parts of the city. Those who plan for these are rarely there in the afternoon, to see the social interaction at the school gate or gathering places at a local pool or park. These were the social interactions that helped to underpin the neighbourhood collective action and effort.

I will leave the last word to Emma Dent Coad – the newly elected Labour Party candidate for Kensington, London, UK, June 2017.⁶⁷

Planning should be about people, not about making money for developers, we have lost the plot.

⁶⁵ East Frame land for higher density development as part of the blueprint for Central City Plan, to make the central city denser for commercial and residential purposes.

⁶⁶ Regenerate Christchurch a new entity established in 2016 is leading the regeneration of central city and eastern suburbs including New Brighton. <http://www.regeneratechristchurch.nz/about-us/>

⁶⁷ <https://www.dezeen.com/2017/06/12/design-writer-emma-dent-coad-labour-mp-kensington-unlikely-victory-uk-richest-constituency/>

8.5 Conclusion

This study has shown that local social connections and networks underpinned the collective community action and adaptation observed following the Canterbury earthquakes. Participants described how in the immediate aftermath neighbours were often the source of emotional and physical support and resources. Neighbourhood connections enabled participants to cope, manage and to solve problems collectively. These connections were often developed through features of the built and natural environment that helped to build a sense of belonging and attachment to the home territory. Propinquity was important; the bumping and gathering places such as schools, small local shops and parks provided the common ground that enabled meaningful pre-existing local interaction. These social connections could be called upon when needed.

The method used was primarily qualitative and this allowed for a more nuanced exploration of what was important in the formation of neighbourhood social interactions. Specific features of place were important. These were well-defined geography, intimate street typology and access to quality natural space and social infrastructure. All enable propinquity and in turn facilitates residents to develop a sense of place and belonging to their community. The findings suggest that the role of place needs to be more deeply incorporated into our understanding of community resilience. The compositional attributes of who lives there are also a factor. Individuals who are resourceful and have leadership skills are drawn to these same features. My findings complement and support the growing understanding of how engagement with neighbours and others who are local, occurs through the shape of the built and natural environment (Aldrich & Kyoto, 2017).

Multiple institutional domains influence the built environment, placement of social infrastructure and access to services and amenity. The institutional environment includes the political, social, and legal rules that provide the structure and foundation for production, exchange and distribution of resources (Sobel, 2002). Although this was not a direct focus of this thesis, outcomes derived from institutional and economic decisions affect local sociability and connectedness. Features of institutions that usually facilitate good outcomes are derived from social drivers that give stability and a mandate. More needs to be directed toward community development in response and recovery; the placement of schools as community hubs, housing and longevity of tenure arrangements to enable people to grow into their neighbourhoods.

The current emergency management paradigm expects residents to rise to the occasion when needed, but the current planning framework does not understand the importance of the social development that underpins this behaviour. The endogenous capacity of a community can be

developed and the elements that help develop it bring multiple benefits, of socially sustainable communities and improved health and wellbeing. This requires institutional acknowledgement, a clear vision of what we are developing our urban areas for. Yes, there is a need for warm homes but there is also a need the infrastructure and neighbourhood layout that help to develop socially well-connected neighbourhoods. The main message from this thesis is that is possible to develop our urban environment in a way that provides multiple benefits, one of which is to build more resilient communities at the same time as providing happy and healthy places for every other day.

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Martin Ward

MaryAnn Bell

Mike Fisher

Miria Goodwin

Paula Smith

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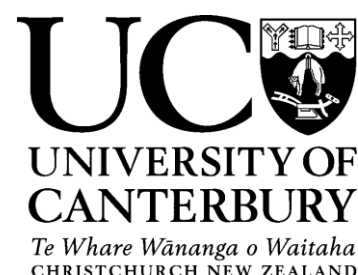
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Appendix A – Information sheet for community participants



Department of Geography

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14 October 2014

Neighbourhood, Social Connectedness and Community Resilience

Information sheet for Community Participants

Thank you for showing an interest in this project exploring the importance of neighbourhood following the Canterbury Christchurch earthquakes. Please read this information sheet carefully before deciding whether or not you would like to participate. My research aims to better understand how public spaces and community facilities helps to strengthen social interaction. The project is part of the Resilient Urban Futures Programme funded through the Ministry of Business, Innovation and Employment; for more information please go to <http://sustainablecities.org.nz/wp-content/uploads/RUFinformation.pdf>.

I am doing this research to fulfil requirements for a doctorate in geography. My supervisors will be pleased to answer questions or pass on any concerns you may have about participating in the project. Our contact details are:

Researcher	Karen Banwell	karen.banwell@pg.canterbury.ac.nz 364 2987 ext 3047
Supervisor	Prof Simon Kingham	simon.kingham@canterbury.ac.nz 364 2893

Research Approach

This research is based in Christchurch and is made up of three parts. For the first part, I interviewed people who were closely involved in the response following the earthquakes, particularly the February 2011 earthquake. Your interview forms the second part where I am interviewing and carrying out focus groups with people from a range of suburbs in Christchurch. These suburbs are all outside the areas that have been red zoned but have experienced damage or had some change in population.

Those interviewed for the third part will be the decision makers, people from organisations who decides on the location and shape of community facilities and services, and those who work in community development.

What does taking part involve?

If you choose to be involved I will ask you to complete a short questionnaire that will take about 10 minutes. I would then like to interview you and this should take about 30 to 35 minutes. I

am asking the same set of questions of all participants, but you will have the opportunity to ask your own questions and to expand on your own thoughts and experiences if you wish. With your permission I will audio record and then transcribe your interview. I may also ask you to draw on two maps, one of Christchurch City and the other a local neighbourhood map, the areas where you work, socialise, shop and exercise etc. This will be available to you should you wish to review it. At no time will you be identifiable in any publications or maps derived from the research.

The interview questions will focus on:

- How long you have lived where you do and why you live there
- Your neighbourhood, what do you like about it and how do you use it
- How you feel about where you live
- Whether you are involved in local associations or groups
- Where you socialise and who you know in your neighbourhood
- What you did following the earthquakes and how you managed
- Your interactions with neighbours
- What has changed in your neighbourhood since the earthquakes
- What you miss most about the city

I will ask you to sign a consent form before we start the interview. You are not obliged to speak with me but if you agree to do so you may at any time:

- Ask questions and decline to answer any question
- Withdraw from the study
- Have the right to turn off the audio recorder, and
- Have access to your interview, both audio and transcript.

What happens next?

The results of this project will be published as part of my thesis, which is a public document able to be accessed through the University of Canterbury library database (library.canterbury.ac.nz/databases). Please be assured that there will be complete anonymity of all data and conversations gathered as part of this project. I alone will handle the data and conversations collected, and will ensure all data are stored in either a locked cupboard or on a password protected computer system.

You will also be asked if you are willing to participate in CEISMIC the Canterbury QuakeStudies Project. This project is a digital archive of earthquake stories and photographs, for more information see www.ceismic.org.nz. A separate information sheet and consent form will be provided. You are under no obligation to participate.

This project has been reviewed *and* approved by the Department of Geography and the Human Ethics Committee at the University of Canterbury. Participants may address any concerns to the Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800 Christchurch (human-ethics@canterbury.ac.nz)

Thank you

Karen

Appendix B – Participant consent form

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August 25 2014



Consent form for research participants

Neighbourhood, social connectedness and community resilience

I have been given a full explanation of this project and I have had the opportunity to ask questions.

I understand:

- what is required of me if I agree to take part in this research,
- that my participation is voluntary and I may withdraw at any time without penalty and that withdrawal of my participation will also include the withdrawal of any information I have provided should this remain practically achievable,
- any information or opinions I provide will be kept confidential to the researcher, no one else will have access to our interview and that any published or reported results will not identify me as a participant, where I live, or my place of employment,
- all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after ten years,
- a thesis is a public document, and this will eventually be available through the University of Canterbury Library,
- the risks associated with taking part and how they will be managed, and
- that I am able to receive a report on the findings of the study by contacting the researcher at the conclusion of the project.

I can contact the researcher Karen Banwell on 03 364 2987 ext 3047 or Professor Simon Kingham 03 364 2893 for further information.

If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

By signing below, I agree to participate in this research project.

I would like to receive a summary of the results - please tick ☐

Signature_____ Date_____

Print Name_____

Appendix C – Key informant questions

Questions for Key informants

Thank you very much for taking the time to participate in this survey. This should take about 45 minutes to complete. Just to remind you that you do not have to answer any questions that you do not wish to answer and you are free to withdraw from participating at any point in the interview.

When I refer to earthquakes here I mean the February earthquake series.

Section 1 This section contains general questions about you and your role prior to and following the earthquakes.

1. Could you please give me a little background about you and or your organisation – this will help to offer some context to the following questions.
2. Please broadly describe your role within your organisation prior to the February 22 earthquakes.
3. In what way were you involved in the earthquake response?
4. Do you think your role has changed as a result of the earthquakes, and if so how?

Section 2 This next set of questions is around community and the response following the earthquakes

5. What do you or organisation mean when you use the word community?
6. Does your organisation focus on community and how does it do this?
7. What does resilient community mean to you and your organisation - is that different?
8. How would your organisation approach or contribute to community resilience?
9. There was quite a bit in the media about how people came together and helped each other out post-earthquake – what do you think prompted or drove this behaviour?
10. Where do you think leadership lay immediately after the February 22 earthquake?
11. Who was leading, and was there anything special about what you saw?

Section 3 This next section is about the role of social connectedness and whether this enabled the collective effort that followed the earthquakes.

12. Why do you think some areas or suburbs had strong a community response following the earthquakes while others did not?
13. Which organisations do you think have played an important role in supporting Christchurch people and communities following the earthquakes?
14. There were many heroic and unceasing actions made by many for days and many weeks after the earthquakes. What do you think motivated or enabled these people to do so?
15. What do you think are the most important elements in building the capacity of the community to respond?
16. Looking back, what do you think your organisation could have done to support people more?
17. What do you think creates and maintains social networks?
18. Do you think that the proximity to public spaces, facilities or services helps to develop social connectedness at all?
19. What sort of public spaces do you think are important?

20. What do you think we should include in how we plan and build our city that would enhance social connectedness?
21. What do you think was the role that community organisations such as sports clubs, rotary, neighbourhood and residents' association played in supporting people?
22. Do you think the role of these community organisations in facilitating social connectedness has changed since the earthquakes?
23. Do you think access to resources was important for people, and if so what resources would you say were important, so people can look after themselves?
24. What do you think your organisation could do more of to support resilience within the city?
25. What do you think could be done by government to enhance the capacity of the community to act collectively when needed?
26. Do you believe there are opportunities for the public to participate now in recovery activities?

Section 4 This is the less structured part of the interview so please feel free to answer as broadly as you wish and adding anything you wish.

27. Please tell me what you believe are the main lessons learned for you or your organisation from the earthquakes?
28. What advice what would you give to those responsible for helping Christchurch to be a more resilient city?
29. Is there anything else or additional thoughts you would like to share or is there someone else in particular you think I should interview.
30. Is there anything else you would like to say or wish I had asked you?

Thank you so much for your time I really do appreciate it.

Karen

Appendix D – Participant questions

Question Guide

Thank you very much taking the time to participate in this interview. The interview should take about 45 minutes to complete. Just to remind you that you do not have to answer any questions that you do not wish to and you are free to withdraw from the interview at any point.

The first set of questions is about where you live.

1. Please describe the place where you live – your street, neighbourhood, or your suburb.
2. Tell me what is it you like most about where you live?
3. Tell what you would like to be different about where you live
4. What proportion of people would you say rent or own their homes in your neighbourhood?
5. Do you think having more renters or owners makes a difference to your neighbourhood?

The next few questions focus more on the social and physical aspects of where you live.

6. If you don't count your family or those who you live with, do you socialise with others within your neighbourhood? Where do you socialise most?
7. What neighbourhood or local groups do you belong to? Examples would include sports, craft or exercise group as well as more formal organisations such as a neighbourhood or residents' association.
8. Do you have locally based shops and services in your neighbourhood? How important do you think they are?
9. What use do you make of local green spaces such as parks and other natural environment areas?
10. What role do think services and facilities provided by the Council play, for example public events, libraries, public spaces and local pools?
11. Do you think it is important for suburbs to have their own sense of place? What helps you identify your suburb?

This next set of questions focus on the time after the earthquakes

12. What did you do on the morning of 4 September 2010 and then later that day? Who did you spend time with?
13. Do you mind if I ask you about 22 February 2011 as it was a very difficult time for the people of Christchurch? Can you tell me where you were and then what you did?
14. What people or places were important in providing support during that time?
15. How long were you without services such as water, electricity, and sewerage? Did you have to make specific plans for longer than the first few days? Could you manage?
16. Do you think some neighbourhoods or suburbs showed a greater collective response – what do you think is the difference between them?
17. Where did you get your information or find out what was happening?
18. Did sharing your experiences with others help - which places would you talk about your experience of the earthquakes?
19. Do you think your relationship with your neighbours has changed in the years since the earthquakes? If so, in what ways?
20. In what ways has your neighbourhood or suburb changed since the earthquakes, what if anything do you miss?
21. Is there anything else or additional thoughts you would like to share?
22. Is there someone else in particular you think I should interview?

Appendix E - Questionnaire

Thank you very much for taking the time to participate in this questionnaire, it should take about 10 minutes to complete. You do not have to answer any questions you do not wish to answer and you can stop at any time.

Questionnaire.¶	
Thank you very much for taking the time to participate in this questionnaire, it should take about 10 minutes to complete. You do not have to answer any questions you do not wish to answer and you can stop at any time.¶	
1¶	Gender?¶ <input type="radio"/> female----- <input type="radio"/> male----- <input type="radio"/> Other¶
2¶	Age?¶ <input type="radio"/> less than 20¶ <input type="radio"/> 41~50 <input type="radio"/> 71~80¶ <input type="radio"/> 21~30¶ <input type="radio"/> 51~60¶ <input type="radio"/> 81+¶ <input type="radio"/> 31~40¶ <input type="radio"/> 61~70¶
3¶	What suburb do you live in?¶ _____¶
4¶	Who lives with you?¶ <input type="radio"/> partner/wife/husband-- <input type="radio"/> no of children¶ <input type="radio"/> alone----- <input type="radio"/> other _____¶ <input type="radio"/> Flatmate/Friend~~number_____¶
5¶	How long have you lived at your current address?¶ _____years¶
6¶	Do you own or rent your home?¶ ..Rent- <input type="radio"/> ¶ Own-- <input type="radio"/> ¶
7¶	Where did you live before this?¶ _____¶
8¶	I feel like I belong to where I live.¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶
9¶	I would say my neighbours are similar to me.¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶
10¶	I would like to be living here for the next five years.¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶
11¶	People live in my suburb because they want to.¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶
12¶	I have good relations with the people who live near to me.¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶
13¶	Most people would say my neighbourhood or street is welcoming and close to each other¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶
14¶	People in my immediate neighbourhood help each other when needed.¶ strongly disagree <input type="radio"/> disagree <input type="radio"/> neutral <input type="radio"/> agree <input type="radio"/> strongly agree <input type="radio"/> don't know <input type="radio"/> ¶

15	I socialise with people who live in my neighbourhood	strongly disagree	disagree	neutral	agree	strongly agree	don't know
16	I would describe myself as sociable	strongly disagree	disagree	neutral	agree	strongly agree	don't know
17	Having a local primary school is important	strongly disagree	disagree	neutral	agree	strongly agree	don't know
18	Places such as local parks or community facilities are important to me	strongly disagree	disagree	neutral	agree	strongly agree	don't know
19	Bumping into friends and neighbours in my local area is important to me	strongly disagree	disagree	neutral	agree	strongly agree	don't know
20	I think taking part in formal local community decision making and activities are important	strongly disagree	disagree	neutral	agree	strongly agree	don't know
21	I think having opportunities to participate in special interest groups locally is important	strongly disagree	disagree	neutral	agree	strongly agree	don't know
22	Having resources such as spare food and camping equipment were important for the first days after the earthquake	strongly disagree	disagree	neutral	agree	strongly agree	don't know
23	My local community coped well with the loss of water, electricity and sewerage after the earthquake	strongly disagree	disagree	neutral	agree	strongly agree	don't know
24	My neighbours learnt to look after each other following the earthquake and this has continued	strongly disagree	disagree	neutral	agree	strongly agree	don't know
25	I miss the natural and man-made landmarks that helped identify my neighbourhood or the city	strongly disagree	disagree	neutral	agree	strongly agree	don't know
26	Local leadership was important following the earthquake	strongly disagree	disagree	neutral	agree	strongly agree	don't know
27	The type of streets such as a cul-de-sac, wide or long streets, affect how well neighbours know each other	strongly disagree	disagree	neutral	agree	strongly agree	don't know